

# United States Department of the Interior Bureau of Land Management

---

Finding of No Significant Impact  
Environmental Assessment  
DOI-BLM-UT-G020-2013-0055-EA

---

May, 2014

## Cedar Mountain Fuels Reduction and Vegetation Restoration Project

### *Location:*

T. 18 S., R. 10 E., Sections 1, 2, 3, 9-16, 20-28, 33-36  
T. 18 S., R. 11 E., Sections 1, 2, 5-36  
T. 18 S., R. 12 E., Sections 5-11, 13-35  
T. 19 S., R. 10 E., Sections 1, 2  
T. 19 S., R. 11 E., Sections 1-6, 8-15, 24  
T. 19 S., R. 12 E., Sections 2-9, 17-19



U.S. Department of the Interior  
Bureau of Land Management  
Price Field Office  
125 South 600 West  
Price, Utah 84501  
Phone: 435-636-3600  
FAX: 435-636-3657



**FINDING OF NO SIGNIFICANT IMPACT**  
**Environmental Assessment**  
***DOI-BLM-UT-G020-2013-0055-EA***  
**Cedar Mountain Fuels Reduction and Vegetation Restoration**  
**Project**

**INTRODUCTION:**

The Bureau of Land Management (BLM) has conducted an environmental analysis (DOI-BLM-UT-G020-2013-0055-EA) for a proposed action to address a fuels reduction and vegetation restoration in the Cedar Mountain area in Emery County. The project will reduce vegetative fuels and implement vegetative/habitat restoration activities within an approximate 59,498 acre project area of public lands administered by the BLM. The underlying need for the proposal will be met while accomplishing the following objectives:

- 1.) Improve ecosystem function and restore vegetative resilience to facilitate recovery from wildland fire. Because watershed health involves the combined workings of a watershed such as land use, soils, and vegetation, the long-term objectives of this restoration treatment are relevant to all of these resources.
- 2.) Enhance and expand sagebrush and grassland-steppe habitat; improving soils, increasing forage and improving habitat for wildlife and livestock while preventing and discouraging the spread of invasive plant species. A number of areas within the old chaining were once open sagebrush communities that have experienced pinyon-juniper encroachment, leading to a loss of vegetative diversity and key sagebrush habitat for wildlife. Retention and improvement of a healthy sagebrush component is critical for elk and deer winter range as well as other sagebrush-dependent species.
- 3.) Protect infrastructure, wildlife habitat, Ponderosa Pine stands, and other resources in the area from a severe, high intensity wildland fire while improving habitat diversity, resiliency, and vigor.

The 59,498 acre project is located in the Cedar Mountain area located in Emery County west of Highway 6 and southwest of Price, Utah. The goals and objectives of the fuels reduction effort would be to enhance public and firefighter safety and an increased range of suppression strategies. In addition, a successful treatment would restore ecosystem health by reproducing the natural variability, stability, and diversity of the vegetative communities within the project area.

EA number DOI-BLM-UT-G020-2013-0055-EA is available at both the BLM Price Field Office in Price, Utah and the BLM Canyon Country District office in Moab, Utah, and is incorporated by reference for this Finding of No Significant Impact (FONSI). A no action alternative and proposed action alternative were analyzed in the EA.



## **FINDING OF NO SIGNIFICANT IMPACT**

Based upon a review of the EA and the supporting documents, I have determined that the project is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27 and do not exceed those effects described in the Price Field Office RMP. Therefore, an environmental impact statement is not needed.

This finding is based on the context and intensity of the project as described:

**Context:** The project is a site-specific action directly involving approximately 59,498 acres of BLM administered land. The Cedar Mountain project area falls generally within Fire Management Unit (FMU) 7 and historical data shows a total of 29 fires occurring in and around the project area

**Intensity:** The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into resources and issues considered (includes supplemental authorities Appendix 1 H-1790-1) and supplemental Instruction Memorandum, Acts, regulations and Executive Orders.

The following have been considered in evaluating intensity for this proposal:

1. **Impacts may be both beneficial and adverse.** The proposed action would impact resources as described in the EA. Mitigating measures to reduce impacts to crucial mule deer winter range were incorporated in the design of the action alternatives. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the Price RMP.
2. **The degree to which the selected alternative will affect public health or safety.** One objective of the proposed action is designed to protect firefighters and the public in the event of a wildfire in the Cedar Mountain area. Infrastructure and high visitation recreation areas will have added protection from possible extreme wildfires in the area.
3. **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas.** The historic and cultural resources of the area will have an Archaeological Report prepared for the proposed Cedar Mountain Fuels Reduction and Vegetative Restoration project area, and information documenting the archaeological inventory and compliance with the National Historic Preservation Act (NHPA) of 1966, as amended, will be on file in the Canyon Country Fire Zone office. Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site. Tribal groups have been requested to identify traditional cultural properties or any other areas of traditional cultural importance to be considered within proximity of the project. The following components of the Human

Environment and Resource Issues are not affected because they are not present in the project area:

BLM Natural Areas	Farmlands (Prime or Unique)	Floodplains	BLM Sensitive Animal Species	Wild and Scenic Rivers
Wilderness/WSA	Wild Horses and Burros	Threatened, Endangered or Candidate Animal Species	Areas of Environmental Critical Concern (ACEC)	

In addition, the following components of the Human Environment and Resource Issues, although present, would not be affected by this proposed action for the reasons listed in Appendix A of the EA:

Threatened, Endangered or Candidate Plant Species	Wastes	Greenhouse Gas Emissions	Hydrologic Conditions	Environmental Justice
Geology/Mineral/Resource/Energy Production	Lands/Access	Migratory Birds	Native American Religious Concerns	Paleontology
Rangeland Standards	Health	Recreation	Socio-Economics	Wetlands/Riparian Zones
				Visual Resources

Twelve components of the Human Environment and Resource Issues were analyzed in detail in Chapter 4:

Air Quality	Fish and Wildlife Excluding USFW Designated Species	Fuels/Fire Management	Invasive Species/Noxious Weeds
Livestock Grazing	Woodland/Forestry	Vegetation Excluding USFW Designated Species	BLM Sensitive Plant Species
Cultural Resources	Soils	Water Resources/Quality	Areas with Wilderness Characteristics



None of these would be significantly impacted because mitigating measures to reduce adverse impacts to resources and to wildlife such as deer, elk, raptors, and migrating birds were incorporated in the design of the action alternative. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the Price Field Office RMP/FEIS. Although the selected alternative is designed specifically to reduce hazardous fuels in the Cedar Mountain area, indirect beneficial impacts to public health and safety will result from the decreased chance of high intensity wildland fire spreading to adjacent lands and recreational areas.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** There is no scientific controversy over the nature of the impacts.
5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The project is not unique or unusual. The BLM has experience implementing similar actions in similar areas. The environmental effects to the human environment are fully analyzed in the EA. There are no predicted effects on the human environment that are considered to be highly uncertain or involve unique or unknown risks.
6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** The actions considered in the selected alternative were considered by the interdisciplinary team within the context of past, present, and reasonably foreseeable future actions. Significant cumulative effects are not predicted. A complete analysis of the direct, indirect, and cumulative effects of the selected alternative and all other alternatives is described in Chapter 4 of the EA.
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts – which include connected actions regardless of land ownership.** The interdisciplinary team evaluated the possible actions in context of past, present and reasonably foreseeable actions. Significant cumulative effects are not predicted. A complete disclosure of the effects of the project is contained in Chapter 4 of the EA.
8. **The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The project will not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historical resources. A cultural inventory will be completed for the proposed action prior to treatment implementation, and consultation with SHPO has been completed in accordance with Section 106 of the NHPA. Consultation pending final archaeological report. No affect determination anticipated because Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) will likely be avoided during

the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, or the degree to which the action may adversely affect: 1) a proposed to be listed endangered or threatened species or its habitat, or 2) a species on BLM's sensitive species list.** Mitigating measures to reduce impacts to wildlife and populations of Thompson's talinum (*Talinum thompsonii*) have been incorporated into the design of the action alternatives. No other threatened or endangered plants or animals are known to occur in the area.
10. **Whether the action threatens a violation of a federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment, where non-federal requirements are consistent with federal requirements.** The project does not violate any known federal, state, local or tribal law or requirement imposed for the protection of the environment. State, local, and tribal interests were given the opportunity to participate in the environmental analysis process. Furthermore, letters were sent to eighteen Native American tribes concerning consulting party status, and there was one response from the Hopi tribe. Letters indicated that no properties of religious and/or cultural significance were identified. In addition, the project is consistent with applicable land management plans, policies, and programs.



---

Ahmed Mohsen  
Price Field Office Manager



---

Date



# United States Department of the Interior Bureau of Land Management

---

Decision Record  
Environmental Assessment  
DOI-BLM-UT-G020-2013-0055-EA

---

May, 2014

## Cedar Mountain Fuels Reduction and Vegetation Restoration Project

### *Location:*

T. 18 S., R. 10 E., Sections 1, 2, 3, 9-16, 20-28, 33-36  
T. 18 S., R. 11 E., Sections 1, 2, 5-36  
T. 18 S., R. 12 E., Sections 5-11, 13-35  
T. 19 S., R. 10 E., Sections 1, 2  
T. 19 S., R. 11 E., Sections 1-6, 8-15, 24  
T. 19 S., R. 12 E., Sections 2-9, 17-19



U.S. Department of the Interior  
Bureau of Land Management  
Price Field Office  
125 South 600 West  
Price, Utah 84501  
Phone: 435-636-3600  
FAX: 435-636-3657



**DECISION RECORD**  
**Environmental Assessment**  
***DOI-BLM-UT-G020-2013-0055-EA***  
**Cedar Mountain Fuels Reduction and Vegetation Restoration**  
**Project**

The Bureau of Land Management (BLM) has conducted an environmental analysis (EA) number DOI-BLM-UT-G020-2013-0055-EA for a proposed action to address a fuels reduction, vegetative restoration, and resource protection effort in the Cedar Mountain area in Emery County, Utah. The project will reduce vegetative fuels and implement vegetative/habitat restoration activities within an approximate 59,498 acre project area of public lands administered by the BLM. In addition, BLM resources may be used to treat State, Private and SITLA lands within the project area.

**Authorities:** The authority for this decision is contained in 43 CFR Ch. II (Revised as of October 1, 2008)

Subpart 4190—Effects of Wildfire Management Decisions

§ 4190.1 Effects of wildfire management decisions.

(a) Notwithstanding the provisions of 43 CFR 4.21(a)(1), when BLM determines that vegetation, soil, or other resources on the public lands are at substantial risk of wildfire due to drought, fuels buildup, or other reasons, or at immediate risk of erosion or other damage due to wildfire, BLM may make a rangeland wildfire management decision effective immediately or on a date established in the decision.

Wildfire management includes but is not limited to:

(1) Fuel reduction or fuel treatment such as prescribed burns and mechanical, chemical, and biological thinning methods (with or without removal of thinned materials); and (2) Projects to stabilize and rehabilitate lands affected by wildfire.

**Compliance and Monitoring:** Transects and/or photo plots to document fuel load and vegetation composition will be assembled within the treatment area prior to project implementation. Monitoring results will be documented prior to treatment and for a period following completion of the project. In addition to fuels monitoring, post treatment monitoring of cultural resources will be conducted.

**Terms / Conditions / Stipulations:**

(1) Contracts utilized for BLM work include specific language to prevent the pollution of air, soil and/or water through contracted operations; along with a cleanup and/or restoration clause in the event that operations or equipment failure or other actions by the contractor, contracted



employees and/or representatives result in the pollution of public lands. Contract language also defines a “hazardous substance,” specifies a “reportable quantity” of released hazardous substance, and describes notification regulations in the event a reportable quantity of hazardous substance is released.

(2) In addition to equipment inspection guidelines and equipment cleaning measures to prevent the introduction and/or spread of noxious weed material, contract specifications include federal regulations regarding sanitary facilities for staging areas and/or worker campsites, trash disposal requirements and other pertinent regulations.

(3) If undocumented cultural or paleontological resources are encountered during treatment activities, work at that specific location will be discontinued until field office staff can be contacted.

(4) Contract stipulations state that pile size will be no larger than six feet by six feet to mitigate potential heat-related soil damage and scorch to adjacent trees from burned piles.

(5) The use of mechanical equipment will be discontinued at the discretion of the BLM during periods of precipitation when soil moisture content could increase the potential for deep ruts and/or excess soil compaction.

(6) The treatment area will be rested from grazing for a minimum of two growing seasons following seeding.

(7) As stated in 4.2.1.4 Fish and Wildlife (page 37) in this EA, Cedar Mountain is crucial mule deer winter range as designated in the RMP for the Price Field Office. Crucial mule deer winter range are protected from surface disturbing activities from December 1 to April 15, although there may be an occasion when weather conditions could allow project work to be accomplished during this period. The Price Field Office Manager may determine that an exception to this restriction may be allowed if, after an analysis, the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance will be allowed during this period.

(8) Place buffers around wildlife corridors and drainages; leave a mosaic of the larger more mature old-growth trees that provide unique and irreplaceable ecological value for animal and plant habitat, genetic diversity and long-term climate records.

#### **PLAN CONFORMANCE AND CONSISTENCY:**

The proposed action alternative has been reviewed and found to be in conformance with one or more of the following BLM Land Use Plans and the associated decision(s):

The Price Field Office Record of Decision and Approved Resource Management Plan (RMP/ROD), October, 2008 authorizes the use of a full spectrum of fuels management tools in the Price Field Office area to reduce the risk of catastrophic wildland fire and to restore ecosystems. Section 5 (RMP/ROD, page 90) authorizes the use of “fuel management strategies (e.g., prescribed fire, mechanical, chemical, biological, hand treatments, and wildland fire) to meet desired future conditions.” The RMP/ROD further states that primary goals of fire and fuels management in the Price Field Office are to reduce the threat of wildfire in the WUI, and to



manage fire and fuels to protect life, firefighter safety, property, and critical resource values (RMP/ROD, page 89).

The Healthy Forests Restoration Act focuses on hazardous fuel treatment of BLM lands at risk of wildland fire. HFRA was designed to address threats to forest and rangeland health, to protect, restore, and enhance ecosystems, and to intensify efforts to protect watersheds. Watershed condition is a term that describes the ability of a system to receive and process precipitation without ecosystem or hydrologic degradation (Brooks and others 2003). Conditions can be influenced by such things as the composition and density of vegetative cover, litter accumulations, and the amount of rock and/or bare soils in a watershed area. Because a wildland fire of high severity can destroy both vegetation and litter layer as well as altering soil properties, the ability of the watershed to process precipitation after a fire can be detrimentally impacted (RMRS-GTR-42-volume 4, Effects of Fire on Soil and Water). Restoration initiatives that focus on the retention of hydrologic equilibrium are the major focus of watershed management projects (Baker 1999, Baker et al. 1998). Section 102 of the HFRA authorizes the implementation of hazardous fuel reduction projects on federal lands in proximity to a municipal water supply system or in proximity to a stream feeding such a watershed where a fire disturbance would have adverse effects on the water quality. Adverse effects could include those risks posed by erosion following wildland fire.

Emery County is committed to reviewing relevant federal and state planning documents for issues directly relating to the county, and to responding and/or providing recommendations for plans. The Emery County General Plan Revision for Public Lands and Resources (October, 1999) supports “land use practices which promote proper ground cover to prevent erosion. The County will promote practices which will decrease the growth of noxious weeds, phreatophytes, and high consumptive vegetation, and will favor practices which increase erosion preventing ground cover (pg.73). In addition, the Cedar Mountain proposed amendment recommends “restoration, maintenance, and enhancement of the watershed in the Cedar Mountain Region” (pg. 5)

The proposed action alternative and no action alternative are also consistent with other federal, state, and local laws, regulations, and plans listed in Section 1.6 of the EA.

**Alternatives Considered:** The No Action Alternative (Alternative B) was not selected because continued fuel loading would pose a greater wildfire hazard than currently exists. With no treatment, a combination of high temperatures, low relative humidity, winds, and/or drought conditions could result in a stand-replacing wildland fire. The potential also exists in this particular area for a wildland fire originating on BLM lands to threaten infrastructure in the area, damage adjacent soils, spread to surrounding private and state lands, impact high-use recreational lands, and to dramatically alter the animal community and habitat. As noted in the EA, high-intensity crown fires can also be extremely damaging to watersheds; this area could be negatively impacted as a result of soil erosion and new drainage patterns from rain and snow following a high-intensity fire event. In addition, the proposed Cedar Mountain project area and surrounding lands are generally classified as Fire Regime Condition Class (FRCC) 3. In the No



Action Alternative FRCC 3 lands would see continued ecosystem degradation and the risk of losing key ecosystem components would remain high.

**Rationale for Decision:** The decision to authorize this important fuels reduction and restoration project has been made in consideration of the environmental impacts of the proposed action, as well as in consideration of impacts from no action. The project is a site-specific action directly involving approximately 59,498 acres of BLM-administered land that will benefit in the long term from a return to more natural fire cycles and improved ecosystem function.

The selected alternative will have both short-term adverse and long-term beneficial impacts to resources as described in the EA. Mitigating measures to reduce adverse impacts to resources were incorporated in the design of the proposed action. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the Price Field office RMP/ROD.

The project conforms with the Price Field Office RMP/ROD management objectives specifying the use of a wide array of fuel treatments to restore natural systems to their desired FRCC and reducing the threats associated with wildfire. Authorized treatment activities are also aligned with the Emery County General Plan, which supports “land use practices which promote proper ground cover to prevent erosion. The County will promote practices which will decrease the growth of noxious weeds, phreatophytes, and high consumptive vegetation, and will favor practices which increase erosion preventing ground cover”. Emery County has reviewed the project EA and supports pinyon juniper projects within the county.

The proposed action was selected because continued fuel loading would pose a greater wildfire hazard than currently exists. With no treatment, a combination of high temperatures, low relative humidity, winds, and/or drought conditions could result in a stand-replacing wildland fire that could endanger the public and put public infrastructure as well as the lives of firefighters at risk. In addition, the proposed Cedar Mountain project area and surrounding lands are generally classified as Fire Regime Condition Class (FRCC) 3. The possible loss of key ecosystems components would be high unless actions are taken to restore these areas to a lower FRCC 2/1.

An Archaeological Clearance Report will be prepared for the proposed Cedar Mountain treatment area, and information documenting the archaeological inventory and compliance with the National Historic Preservation Act (NHPA) of 1966, as amended, will be on file in the Canyon Country Fire Zone office. Sites identified and determined to be eligible for the National Register of Historic Places (NHRP) will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site. Tribal groups were requested to identify traditional cultural properties or any other areas of traditional cultural importance to be considered within proximity of the project. A response from the Hopi tribe has been received and indicated no affect to cultural resources.

Notification of the preparation, on-going progress and decision regarding this environmental assessment was posted on the Environmental Notification Bulletin Board (ENBB) located at

<https://www.blm.gov/ut/enbb/index.php> beginning in August 6<sup>th</sup>, 2013. On April 15<sup>th</sup>, an article describing the proposed project and requesting comments was submitted to the Sun Advocate and Emery County Progress in Carbon and Emery Counties. One public scoping comment has been received to date on this project, in addition to issues analyzed in detail in Chapter 4 identified through resource staff and cooperating agency involvement. Public comment period for the EA ended May 15<sup>th</sup>, 2014 and was noted on the ENBB. One public comment on the EA was received. Comments and responses can be found in Appendix D of the EA.

**Protest/Appeal Language:** This decision is subject to administrative appeal. Within 30 days of receipt of this decision, parties who are adversely affected and believe it is incorrect have the right to appeal to the Department of the Interior Board of Land Appeals, Office of the Secretary, in accordance with regulations at 43 CFR 4.4. Appellants must follow procedures outlined in the form, "Information on Taking Appeals to the Board of Land Appeals." An appeal should be in writing and specify the reasons, clearly and concisely, as to why the decision is in error. Appellants are requested to supply this office with a copy of the Statement of Reasons.

This wildfire management decision is issued under 43 CFR Part 5003.1 and is effective immediately. The BLM has made the determination that vegetation, soil, or other resources on the public lands are at substantial risk of wildfire due to drought, fuels buildup, or other reasons, or at immediate risk of erosion or other damage due to wildfire. Thus, notwithstanding the provisions of 43 CFR 4.21(a)(1), filing a notice of appeal under 43 CFR Part 4 does not automatically suspend the effect of the decision. Appeal of this decision may be made to the Interior Board of Land Appeals in accordance with 43 CFR 4.410. The Interior Board of Land Appeals must decide an appeal of this decision within 60 days after all pleadings have been filed, and within 180 days after the appeal was filed as contained in 43 CFR 4.416.



---

Ahmed Mohsen  
Price Field Office Manager



---

Date



# United States Department of the Interior Bureau of Land Management

---

Environmental Assessment  
DOI-BLM-UT-G020-2013-0055-EA

---

May, 2014

## Cedar Mountain Fuels Reduction and Vegetation Restoration Project

### *Location:*

T. 18 S., R. 10 E., Sections 1, 2, 3, 9-16, 20-28, 33-36  
T. 18 S., R. 11 E., Sections 1, 2, 5-36  
T. 18 S., R. 12 E., Sections 5-11, 13-35  
T. 19 S., R. 10 E., Sections 1, 2  
T. 19 S., R. 11 E., Sections 1-6, 8-15, 24  
T. 19 S., R. 12 E., Sections 2-9, 17-19



U.S. Department of the Interior  
Bureau of Land Management  
Price Field Office  
125 South 600 West  
Price, Utah 84501  
Phone: 435-636-3600  
FAX: 435-636-3657



# Cedar Mountain Fuels Reduction and Vegetation Restoration Project

DOI-BLM-UT-G020-2013-0055-EA

---

## Table of Contents

<b>1.0 PURPOSE &amp; NEED</b>	<b>5</b>
1.1 Introduction	5
1.2 Background	5
1.3 Need for the Proposed Action	7
1.4 Purpose(s) of the Proposed Action	9
1.5 Conformance with BLM Land Use Plan(s)	9
1.6 Relationship to Statutes, Regulations, or Other Plans	10
1.7 Identification of Issues	13
1.7.1 Air Quality	14
1.7.2 BLM Sensitive Plant Species	14
1.7.3 Cultural Resources	14
1.7.4 Fish and Wildlife Excluding USFW Designated Species	14
1.7.5 Fuels/Fire Management	14
1.7.6 Invasive Species/Noxious Weeds	14
1.7.7 Livestock Grazing	14
1.7.8 Soils	14
1.7.9 Water Resources/Quality	14
1.7.10 Woodland/Forestry	14
1.7.11 Vegetation Excluding USFW Designated Species	15
1.7.12 Non-WSA Lands with Wilderness Characteristics	15
1.8 Issues Considered but Eliminated from Further Analysis	15
1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change	15
1.8.2 Externally Proposed Wilderness	16
1.9 Summary	17
<b>2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION</b>	<b>17</b>
2.1 Introduction	17
2.2 Alternative A – Proposed Action	18
2.3 Alternative B – No Action	23
2.4 Alternatives Considered, but Eliminated from Further Analysis	23
<b>3.0 AFFECTED ENVIRONMENT</b>	<b>24</b>



3.1 Introduction.....	24
3.2 General Setting.....	24
3.3 Resources/Issues Brought Forward for Analysis.....	25
3.3.1 Air Quality .....	25
3.3.2 BLM Sensitive Plant Species.....	27
3.3.3 Cultural Resources .....	27
3.3.4 Fish and Wildlife Excluding USFW Designated Species .....	28
3.3.5 Fuels/Fire Management .....	28
3.3.6 Invasive Species/Noxious Weeds .....	29
3.3.7 Livestock Grazing.....	29
3.3.8 Soils.....	30
3.3.9 Water Resources/Quality .....	30
3.3.10 Woodland/Forestry .....	31
3.3.11 Vegetation Excluding USFW Designated Species .....	31
3.3.12 Non-WSA Lands with Wilderness Characteristics.....	32
<b>4.0 ENVIRONMENTAL IMPACTS.....</b>	<b>34</b>
4.1 Introduction.....	34
4.2 Direct and Indirect Impacts.....	34
4.2.1 Alternative A – Proposed Action.....	34
4.2.1.1 Air Quality .....	34
4.2.1.2 BLM Sensitive Plant Species .....	34
4.2.1.3 Cultural Resources.....	35
4.2.1.4 Fish and Wildlife Excluding USFW Designated Species .....	36
4.2.1.5 Fuels/Fire Management .....	37
4.2.1.6 Invasive Species/Noxious Weeds.....	39
4.2.1.7 Livestock Grazing.....	40
4.2.1.8 Soils .....	41
4.2.1.9 Water Resources/Quality .....	42
4.2.1.10 Woodland/Forestry .....	42
4.2.1.11 Vegetation Excluding USFW Designated Species .....	42
4.2.1.12 Non-WSA Lands with Wilderness Characteristics.....	43
4.2.1.13 Monitoring and/or Compliance.....	44
4.2.2. Alternative B – No Action .....	45
4.2.2.1 Air Quality.....	45
4.2.2.2 BLM Sensitive Plant Species.....	45

4.2.2.3	Cultural Resources.....	45
4.2.2.4	Fish and Wildlife Excluding USFW Designated Species.....	45
4.2.2.5	Fuels/Fire Management .....	46
4.2.2.6	Invasive Species/Noxious Weeds .....	46
4.2.2.7	Livestock Grazing.....	46
4.2.2.8	Soils.....	47
4.2.2.9	Water Resources/Quality.....	47
4.2.2.10	Woodland/Forestry .....	47
4.2.2.11	Vegetation Excluding USFW Designated Species .....	47
4.2.2.12	Non-WSA Lands with Wilderness Characteristics.....	48
4.3	Cumulative Impacts Analysis .....	48
4.3.1	Air Quality .....	48
4.3.2	BLM Sensitive Plant Species.....	48
4.3.3	Cultural Resources .....	49
4.3.4	Fish and Wildlife Excluding USFW Designated Species.....	50
4.3.5	Fuels/Fire Management .....	50
4.3.6	Invasive Species/Noxious Weeds .....	51
4.3.7	Livestock Grazing.....	52
4.3.8	Soils.....	53
4.3.9	Water Resources/Quality .....	53
4.3.10	Woodland/Forestry .....	54
4.3.11	Vegetation Excluding USFW Designated Species .....	54
4.3.12	Non-WSA Lands with Wilderness Characteristics.....	55
<b>5.0</b>	<b>CONSULTATION AND COORDINATION.....</b>	<b>56</b>
5.1	Introduction.....	56
5.2	Persons, Groups, and Agencies Consulted: .....	56
5.3	Summary of Public Participation .....	57
<b>6.0</b>	<b>REFERENCES, GLOSSARY AND ACRONYMS .....</b>	<b>58</b>
6.1	References Cited .....	58
6.2	Glossary of Terms.....	61
6.3	List of Acronyms .....	63
<b>APPENDICES</b>	<b>.....</b>	<b>65</b>
APPENDIX A:	Interdisciplinary Team Checklist .....	65
APPENDIX B:	Cedar Mountain Burn Probability .....	70
APPENDIX C:	Fire History in the Cedar Mountain Project Area .....	71



APPENDIX D: Public Scoping Comments and BLM Responses.....	72
APPENDIX E: Fuels Management Best Management Practices .....	84
APPENDIX F: Utah Noxious Weeds List.....	90
APPENDIX G: Seed Mix .....	92
APPENDIX H: Juniper Old Growth Characteristics .....	93
APPENDIX I: Fire Regime Condition Class (FRCC).....	95
APPENDIX J: Project Vicinity.....	96
APPENDIX K: Phase 1 Units Map .....	97

# **Cedar Mountain Fuels Reduction and Vegetation Restoration Project**

**DOI-BLM-UT-G020-2013-0055-EA**

## **1.0 PURPOSE & NEED**

### **1.1 Introduction**

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project as proposed by the Bureau of Land Management (BLM) Canyon Country Fire Zone and the Price Field Office (PFO). The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or no-action alternative. The EA assists the BLM in project planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in the BLM Price Field Office Resource Management Plan (RMP), October, 2008.

### **1.2 Background**

Since the inception of the National Fire Plan (NFP) in 2002, the BLM has been prioritizing areas for fuels treatment based on fuel conditions, distance from Wildland/ Urban Interface areas (WUI) and other human infrastructure, ecosystem health, and resource values that may be at risk. The general goals outlined in the NFP include the implementation of fuels treatments that will (1) reduce the risk of catastrophic fire; (2) protect communities; (3) reduce fuel hazards; (4) reduce wildfire acres and costs; and (5) restore fire-adapted ecosystems. The Price Field Office RMP incorporates the landscape level fire management goals and objectives for the Moab Fire Zone first established in the Utah Land Use Plan (LUP) Amendment for Fire and Fuels Management (September, 2005) that were based on the general goals of the NFP. Detailed information included in the LUP Amendment and incorporated into the RMP describes wildland fire conditions based on fire regime and current condition class, a measurement that reflects the fire frequency and potential for fire severity and intensity in a selected area compared with assumed historic wildland fire conditions for that area (Chapter 3, page 3-31). In addition, the RMP authorizes the reduction of hazardous fuels throughout the Price Field Office to restore ecosystems; to protect human, natural and cultural resources; and to reduce the threat of wildfire to communities (page 89). Treatments may be planned in areas where key ecosystem components have been compromised and/or where a high intensity catastrophic fire would severely impact resources. Compromised factors may include vegetation composition (density,



canopy closure, displacement of historical community, etc.), structural stage, and/or stand age; where invasive plants have spread or have the potential to spread; in areas with high fire frequency and/or severity; and/or where insects or diseases have altered vegetation or have the potential to severely alter vegetative composition.

In addition, the FY 2012 Appropriations Act (Wildland Fire Management) clarifies the use of federal appropriated funds and provides legislative authority for the Secretary of Interior to enter into procurement contracts, grants, and cooperative agreements for hazardous fuels reduction activities on Federal and adjacent non-Federal lands for activities that benefit resources on Federal Land.

The goal of treating vegetation is to restore ecosystem health by reproducing the natural variability, stability, and diversity of the vegetative communities within a project area. In addition, successfully completed treatments enhance public and firefighter safety by providing an increased range of suppression strategies.

In many areas of the southwestern United States and particularly across public lands, pinyon pine (*Pinus edulis*) and juniper (*Juniperus osteosperma*) trees are the dominant species. Although controversy exists regarding the historic density and structure of the pinyon-juniper woodlands that currently occupy millions of acres of land across the Colorado plateau region, it is generally accepted that much of what is now pinyon-juniper woodland may once have been land vegetated dominantly by grasses and forbs with no more than 10-15 trees every 2-3 acres (Brockway, et al, *Journal of Environmental Management* (2002) 179-197). Climate, grazing and fire suppression are the major factors most often linked to the expansion of pinyon-juniper woodlands (Miller and Wigand, 1994).

Historical conditions and historic fire occurrence in pinyon-juniper woodlands can vary across a given landscape due to many different contributing factors. Fire patterns and fire behavior are closely related to unique topography, soils, environmental conditions and vegetation that is present at a given time (RMRS-GTR-202, 2007). Prior to European settlement, more complex vegetative communities contained a mixture of fire patterns and behavior based on their multifaceted fuel types. In general, studies show that southern Utah sagebrush and tree-dominated cover was fifty percent less in pre-Euro American settlement landscapes than in present day (RMRS-GTR-202) with greater mixtures of size and age-classes of trees. Fires may have been infrequent across the area, although patterns of disturbance indicate that there was a shifting distribution of woodland and sagebrush dominance throughout the landscape (RMRS-GTR-202). Canyon bottoms and swales appear to have the highest fire frequencies with larger fires occurring during periods of drought.

The Canyon Country Fire Zone Fire Management Plan (FMP) September, 2004, identifies and integrates up-to-date wildland fire management guidance, direction, and activities required to implement national fire policy as addressed in the goals and objectives authorized by the Price Field Office RMP. The FMP is a more detailed representation of the fire management activities relative to the Price Field Office. Page five of the document outlines specific management objectives including the use of various fuels management methods to: reduce hazardous fuels; restore wildlife habitat; improve and/or maintain rangelands; protect the characteristics of special areas; protect developed recreation facilities; and prevent watershed degradation. The FMP



further specifies (Chapter 2, pages 2-5 and 2-6) that pinyon-juniper woodlands with less than 100-year-old trees should be treated through the use of prescribed fire or mechanical means to restore native shrub and grass communities.

The FMP also outlines the risks, values, and hazards for the three field offices within the Canyon Country Fire Zone and delineates the entire area into fire management units. The 22 fire management units (FMUs) within the Canyon Country Fire Zone are discussed in the FMP in relation to wildland fire management goals for each unit. Goals outlined include hazardous fuel reduction both within and outside of WUI areas. FMU boundaries were based on topographic features, values to be protected, political boundaries, fuel types, fire regime and/or condition class, accessibility and other distinguishing characteristics. The proposed action falls generally within FMU 7, Cedar Mountain, and located 30 miles south of Price, Utah. The FMP recommends fuels management strategies such as prescribed fire and mechanical and/or other types of treatment to reduce hazardous fuel conditions and increase high value browse and herbaceous production (Canyon Country Fire Zone FMP, page 27). Wildland fire is undesirable in mature pinyon-juniper stands utilized as thermal cover by wildlife, although low intensity fires in previously chained areas are recommended for fire management to remove undesirable vegetation.

Fire occurrence and size varies from year to year depending on the amount of moisture associated with lightning-producing thunderstorms, but pinyon-juniper woodlands are the primary fire carrier with fire intensity a direct result of high stand density and weather conditions. Over the past fifteen years, Utah has had ongoing drought periods that have depleted both soil and fuel moistures. Drought stress can increase vulnerability to insects and disease, and persistent low fuel moistures increase tree flammability. Combined, these conditions magnify the probability for hot, fast-spreading fire. High severity wildland fire in this particular area could create unstable slopes, increased erosion and/or sedimentation, charred soils and vegetation, damage to riparian areas along the creeks, altered wildlife habitat, and possible economic loss due to damaged rangelands.

Within the last 50 years many areas within the Cedar Mountain area have been chained. Approximately 60-70% of the mesa tops within the proposed project area has been chained in the past. Many of these chainings have not been maintained after the initial treatment. These areas are experiencing pinyon and juniper regrowth and much of the slash from the initial treatment still remains.

### **1.3 Need for the Proposed Action**

The Cedar Mountain area is currently experiencing pinyon juniper encroachment. This expansion throughout the area is threatening the local ecosystems by degrading the landscape and creating a pinyon juniper monoculture. The combination of increased fuel loads and high fire frequency increases the possibility for high-severity wildfire in the area. Increased fire size and intensity could put local infrastructure in the Cedar Mountain vicinity at risk.

Ecological restoration is generally approached from the context of the “fundamental characteristics” of an ecosystem, which may be determined from historical data, commonly accepted indications of past conditions, and/or from scientific data collected directly from



undisrupted sites. Over the past several decades, ecosystems on public lands in southeastern Utah have experienced gradual losses of biodiversity, sustainability, and successional vegetative development. Overall, compromised ecosystems have a lowered resiliency and cannot easily recover from impacts such as prolonged climate changes and/or cycles of disturbance like high intensity fire. Elements critical to an ecosystem that may result from or be affected by an uncharacteristically intense wildland fire or from lengthy periods of drought include accelerated erosion; altered and/or declining soil development and losses in sustainable nutrient cycling; loss of natural hydrologic pathways; deterioration or loss of watershed integrity resulting in degradation of water quality and quantity; and deterioration of habitat and habitat diversity (Bartos, D., et al, 1999).

Healthy sagebrush ecosystems should consist of a diverse array of plants and support a wide variety of wildlife species. However, sagebrush habitat throughout the Great Basin and Colorado Plateau is being degraded due to pinyon/juniper encroachment (Miller, R.F. and R.J. Tausch 2001). Research has clearly shown that pinyon and juniper woodlands have increased substantially throughout the Intermountain West over the past 130 – 150 years (Romme et al. 2009; Wisdom and Chambers 2009; Miller and Tausch 2001; Tausch and West 1995, 1988). Prior to 1860 sagebrush-steppe communities were dominant and trees were virtually absent on two-thirds of the landscape. Now, less than one-third of the landscape is treeless with more than 90% of the trees establishing since 1860 (Miller et al. 2008). Without disturbance these woodlands will continue to mature and expand leading to increased fuel loading and nearly closed canopy conditions within the next 50 years (Miller et al. 2008). Where pinyon/juniper dominates they out-compete understory species for light, moisture, and nutrients eventually resulting in nearly complete removal of the understory (Miller et al. 2000, 2005). A diverse understory, consisting of shrubs, forbs and grasses is key to ecosystem resilience which promotes soil stability and resistance to invasive species like cheatgrass and enables a system to recover naturally following disturbance. Excessive fuel buildup due to juniper expansion and infilling can eventually lead to catastrophic wildfire which may threaten private property and further degrade the ecosystem by promoting cheatgrass dominance. Once established cheatgrass becomes a major obstacle preventing the recolonization and growth of native perennial vegetation and can also result in major increases in fire occurrence and size (Whisenant 1990; Brooks and Pyke 2001). In order to curb this process it is essential that action be taken (Wisdom and Chambers 2009; Miller et al. 2008). Degraded sagebrush habitat can be improved by removing junipers and reseeding with perennial species where desirable understory species are lacking (USDI Bureau of Land Management 1999, 2000). This proactive approach reduces the risk of catastrophic wildfire and promotes ecosystem resiliency.

The term “natural fire regime” is a general classification of the role of fire in a landscape based on what is known or understood about the historical conditions in a given area. Fire regime classifications are devised based on the average number of years between fires, and are further distinguished by “condition class.” The condition class of a specific area relates directly to its departure from a natural fire regime and the present condition of the ecosystem as a result of this departure. Fire regime condition class, or FRCC, can range from low (FRCC 1) to high (FRCC 3) depending on the attributes in an area and how substantially those attributes have been altered from their natural or historic range (Appendix I). The Healthy Forests Restoration Act of 2003 (HFRA) authorizes the expedited treatment of areas with a high FRCC in which wildland fire



poses a threat to the quality of a watershed and/or in areas that have experienced significant resource damage.

Fuels reduction treatments often target FRCC2 and FRCC3 areas where dense monocultures of pinyon-juniper woodlands have substantially altered understory species and where fire has been absent to the extent that fuel loads are considered to be a threat to the ecosystem and/or Wildland Urban Interface (WUI) areas. The proposed Cedar Mountain project area and surrounding lands are generally classified as FRCC3.

#### **1.4 Purpose(s) of the Proposed Action**

Due to the closed canopy nature of dense pinyon-juniper stands, understory vegetation does not have the ability to compete for essential resources such as moisture and sunlight, which prevents understory vegetation from establishing or surviving in these conditions. Opening up the canopy through vegetative removal activities reduces the potential for damage from high-severity wildland fire while creating environmental site conditions favorable to grass, forb and shrub establishment. Therefore, hazardous fuel removal activities would address the underlying need for the proposal as detailed above while also addressing the following objectives:

1. Improve ecosystem function and restore vegetative resilience to facilitate recovery from wildland fire. Because watershed health involves the combined workings of a watershed such as land use, soils, and vegetation, the long-term objectives of this restoration treatment are relevant to all of these resources.
2. Enhance and expand sagebrush and grassland-steppe habitat; improving soils, increasing forage and improving habitat for wildlife and livestock while preventing and discouraging the spread of invasive plant species. A number of areas within the old chaining were once open sagebrush communities that have experienced pinyon-juniper encroachment, leading to a loss of vegetative diversity and key sagebrush habitat for wildlife. Retention and improvement of a healthy sagebrush component is critical for elk and deer winter range as well as other sagebrush-dependent species.
3. Protect infrastructure, wildlife habitat, Ponderosa Pine stands, and other resources in the area from a severe, high intensity wildland fire while improving habitat diversity, resiliency, and vigor.

#### **1.5 Conformance with BLM Land Use Plan(s)**

As required by 43 CFR 1610.5, the proposed action is in conformance with established management guidelines. The Price Field Office Record of Decision and Approved Resource Management Plan (RMP/ROD), October, 2008, authorized the use of a full spectrum of fuels management tools in the Price Field Office area to reduce the risk of catastrophic wildland fire and to restore ecosystems. Section 5 (RMP/ROD, page 90) authorizes the use of “fuel management strategies (e.g., prescribed fire, mechanical, chemical, biological, hand treatments, and wildland fire) to meet desired future conditions.”



Management decisions included in the Price Field Office ROD/RMP (ROD/RMP, Vegetation, page 69) allow for vegetation manipulation to achieve desired vegetation conditions. The ROD/RMP identifies pinyon-juniper woodland as a priority vegetation community and authorizes management and maintenance to move woodlands toward their approximate historic range (ROD/RMP, Vegetation, VEG-12, page 71).

## **1.6 Relationship to Statutes, Regulations, or Other Plans**

The Federal Land Policy and Management Act of 1976 (FLPMA), as amended (43 U.S.C. 1701 et seq.) is the basic authority for BLM activities. It establishes the principle that public lands be retained in Federal ownership and provides for the management, protection, development, and enhancement of the public lands under the principles of multiple use, sustained development, and sustained yield.

The National Fire Plan was designed to manage the potential impacts of wildland fire to communities and ecosystems and to reduce the risk of catastrophic wildland fire. Implemented in 2001 and encompassing agencies of the Department of Agriculture (Forest Service) and Department of Interior (National Park Service, Fish and Wildlife Service, BLM), the NFP focuses on strategies for improving fire preparedness, restoring and rehabilitating burned areas, reducing hazardous fuels, assisting communities, and identifying research needs. The National Fire Plan stresses accountability and collaboration at the local level (state, county and local communities).

The proposed action is directly influenced and supported by the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report* (November, 2005), which evaluates the effects of vegetation treatments such as manual, mechanical, and biological activities (non-herbicide) on public lands.

As mentioned in Chapter 1.3 (page 8) the HFRA focuses on hazardous fuel treatment of BLM lands at risk from wildland fire. HFRA was designed to address threats to forest and rangeland health, to protect, restore, and enhance ecosystems, and to intensify efforts to protect watersheds. Watershed condition is a term that describes the ability of a system to receive and process precipitation without ecosystem or hydrologic degradation (Brooks and Others 2003). Conditions can be influenced by such things as the composition and density of vegetative cover, litter accumulations, and the amount of rock and/or bare soils in a watershed area. Because a wildland fire of high severity can destroy both vegetation and litter layer as well as altering soil properties, the ability of the watershed to process precipitation after a fire can be detrimentally impacted (RMRS-GTR-42-volume 4, Effects of Fire on Soil and Water). Restoration initiatives that focus on the retention of hydrologic equilibrium are the major focus of watershed management projects (Baker 1999, Baker et al. 1998). Section 102 of the HFRA authorizes the implementation of hazardous fuel reduction projects on federal lands in proximity to a municipal water supply system or in proximity to a stream feeding such a watershed where a fire disturbance would have adverse effects on the water quality. Adverse effects could include those risks posed by erosion following wildland fire.

The Utah Division of Water Quality (UDWQ) stresses the importance of treating uplands to stabilize soils in their Watershed Approach initiative. High severity fires can be followed by



extreme soil erosion, with unstable soils that may be swept down drainages into lowland watersheds or water bodies. General standards for water quality in Utah are found in the “Standards of Quality for Waters of the State,” R317-2-6, Utah Administrative Code, December 1997.

A memorandum of understanding (MOU) was developed between the Department of Interior, Forest Service, State Foresters, and the National Association of Counties to prioritize the annual selection of fuels treatment projects in both the wildland-urban interface and outside the wildland-urban interface. In conformance with the guidelines developed within the MOU, areas that have the highest risk for catastrophic fire have been identified by cooperating agencies in southeastern Utah and prioritized for completion over the next several years to meet goals of both the President’s Healthy Forests Initiative as well as the HFRA.

The Fundamentals of Rangeland Health (43 CFR 4180) regulations require the BLM to develop and implement rangeland health standards in consultation with Resource Advisory Councils. Standards for land health include measures such as fuels treatments to ensure functioning watersheds, riparian/wetlands, vegetation communities, and water quality resources.

As required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and the National Historic Preservation Act (16 USC 1531), local Native American tribes were notified of the proposed action in May of 2014. To date one letter has been received (Hopi Tribe) which supports the BLM’s effort to solicit input, address concerns, and continued consultation on cultural resources for the Cedar Mountain project.

The implementation of effective wildland fire management programs is mandated in Departmental Manual 620 (Wildland Fire Management). Section 1.5 (C) (Objectives) instructs the BLM to “...develop fire management plans, programs, and activities which are based on the best available science; that incorporate public health and environmental quality considerations; and support Bureau land, natural, and cultural resource management goals and objectives.”

Public Rangelands Improvement Act 1978, Title II (43 U.S.C. 1901 *et seq.*), as amended. Among other management objectives, this act provides for temporary discontinuance of grazing uses for the specific purpose of improving public rangeland conditions and production.

BLM Grazing Management Regulations, 43 CFR Subpart 4180.2(e), requires development of guidelines to address the restoration, maintenance, and enhancement of habitats to promote the conservation of federally proposed, federally candidate, and other special status species.

BLM National Policy Guidance on Special Status Species Management (Manual 6840) provides direction for the conservation of special status animal and plant species as well as for their habitats.

Emery County is committed to reviewing relevant federal and state planning documents for issues directly relating to the county, and to responding and/or providing recommendations for plans. The Emery County General Plan Revision for Public Lands and Resources (October, 1999) supports “land use practices which promote proper ground cover to prevent erosion. The County will promote practices which will decrease the growth of noxious weeds, phreatophytes,



and high consumptive vegetation, and will favor practices which increase erosion preventing ground cover (pg.73). In addition, the Cedar Mountain proposed amendment recommends “restoration, maintenance, and enhancement of the watershed in the Cedar Mountain Region” (pg. 5)

The proposed action alternatives and no action alternative are also consistent with other federal, state, and local laws, regulations, and plans, including the following:

- Endangered Species Act of 1973 (ESA), as amended.
- Executive Order on the Responsibilities of Federal Agencies to Protect Migratory Birds (Migratory Bird Treaty Act), January 11, 2001.
- FY 2012 Appropriations Act (Wildland Fire Management)
- Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, November 1999.
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy, November, 2004; and, National Sage-Grouse Strategy Implementation, December 20, 2004.
- Federal Noxious Weed Act of 1974, 7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988 and 1994.
- Environmental Protection Agency, 40 CFR 51.300, Protection of Visibility.
- Clean Air Act of 1963; Air Quality Act of 1967; Clean Air Act Extension of 1970; Clean Air Act Amendments of 1977 and 1990.
- The environmental analysis in this EA is tiered to and incorporates by reference the environmental analysis contained in the Price Field Office PRMP/FEIS including the Utah Land Use Plan Amendment for Fire and Fuels Management; and the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report, November 2005.
- 2012 Fiscal Year Appropriations Act (Wildland Fire Management)
- Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470(f) pursuant to 36 CFR 800.2(d)(3).
- Executive Order 13175

## 1.7 Identification of Issues

Project discussion, design, and scoping have been coordinated with resources specialists in the Price Field Office, cooperating agencies and the public. The current project proposal was presented to the Price Field Office resource staff in August of 2013, with comments, suggestions and mitigation incorporated into the final project design. Current scientific information was utilized in the development of the proposed action including analyses of similar pinyon/juniper fuels reduction projects within the Canyon Country Field Offices as well as data assimilated from Canyon Country Fire Zone Emergency Stabilization and Rehabilitation projects conducted in pinyon/juniper communities. In addition to the expertise of the BLM fuels specialist, information was also exchanged with collaborating agencies including other federal, state, and local entities. The interested public was notified of the proposed treatment and the ongoing analysis phase of the project in August of 2013, through the Utah BLM State Office Environmental Notification Bulletin Board (<https://www.blm.gov/ut/enbb/index.php>). One group commented to date. Comments and responses are attached in the appendices section (appendix D).

An Archaeological Report will be prepared for the proposed Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project area, and information documenting the archaeological inventory and compliance with the National Historic Preservation Act (NHPA) of 1966, as amended, will be on file in the Canyon Country Fire Zone office. Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site. Tribal groups have been requested to identify traditional cultural properties or any other areas of traditional cultural importance to be considered within proximity of the project.

The use of specific herbicide active ingredients and formulations on BLM lands in Utah was authorized by the 17 States Herbicide PEIS in 2007. The 2007 PEIS identifies potential impacts to the natural and human environment from the use of herbicides, incorporates standard operating procedures and mitigation measures to ensure the protection of resources, and approves for use on western BLM lands specific herbicide active ingredients.

The 2007 17 States Vegetation Management PER analyzes potential effects of vegetation treatment methods (fire, mechanical, manual, and biological), considers reasonably foreseeable hazardous fuels reduction activities, and provides a cumulative impact analysis for the use of herbicides in conjunction with other vegetation treatment activities.

Proposed vegetation treatments and the environmental analysis of each treatment are completed on a site-specific and project-specific basis. Because of the evolving nature of fuels treatment, the variety of factors involved in determining treatment alternatives, and the effect of unpredictable external factors such as drought, disease, and/or insect predation, each treatment area is analyzed on an individual basis to study the most effective way to achieve treatment goals. Team analysis and interested parties identified potential impacts (PI) from the proposed action to resources listed below:



#### **1.7.1 Air Quality**

- Will smoke from fire affect air quality?
- Will prescribed burning cause visibility impacts even if air quality standards are not violated?

#### **1.7.2 BLM Sensitive Plant Species**

- Ground disturbance from the proposed project may affect the populations of Thompson's talinum (*Talinum thompsonii*).

#### **1.7.3 Cultural Resources**

- How will the project protect cultural resources within the area?
- How will cultural resources in the area be identified prior to undertaking?

#### **1.7.4 Fish and Wildlife Excluding USFW Designated Species**

- The project area includes crucial mule deer winter range; seasonal restrictions would apply to surface disturbing activities (December 1 – April 15) unless exceptions are granted.
- Implementation of the proposed action could improve habitat for big game species as well as for raptors and other general wildlife species.

#### **1.7.5 Fuels/Fire Management**

- Does the proposed project decrease chances of extreme fire moving through the area?
- Will this fuels treatment help move the area from a FRCC 3 to a FRCC 2/1?

#### **1.7.6 Invasive Species/Noxious Weeds**

- Any surface disturbing activity could result in the introduction or spread of invasive species/noxious weeds. This project has the potential to create niches in the vegetation where invasive species/noxious weeds could become established. Halogeton and Russian thistle are invasive species that are present within the project area. There are no known noxious weeds within the project area.

#### **1.7.7 Livestock Grazing**

- Potential livestock grazing restrictions in treated areas.
- Changes in grazing patterns could occur due to changes in the vegetative communities within the proposed treated areas.

#### **1.7.8 Soils**

- Increased soil compaction, reduced infiltration where foot traffic and equipment work.
- Removal of vegetation could increase soil erosion.

#### **1.7.9 Water Resources/Quality**

- Increased surface runoff due to removal of vegetation.
- Possibility of increased soil erosion.

#### **1.7.10 Woodland/Forestry**

- The proposed project is within a public wood cutting area. Implementation of the project would result in the loss of woodland/forestry products. The long term effects of the

project could increase the overall health of the woodlands/forestry by minimizing the possibility of catastrophic fires and increasing the resistance of residual trees to insect caused mortality.

#### **1.7.11 Vegetation Excluding USFW Designated Species**

- The vegetative community within the proposed areas for treatment would be changed from a late seral stage to an early seral stage.
- Grazing restrictions on treated areas may require the use of temporary fencing and temporary water developments to allow grazing to continue outside of the treated areas.

#### **1.7.12 Non-WSA Lands with Wilderness Characteristics**

- Potential impacts to lands the BLM has determined to have wilderness characteristics?

### **1.8 Issues Considered but Eliminated from Further Analysis**

The Interdisciplinary Team Checklist (see Appendix A) identifies those elements that are either not present (NP) within the proposed project area or present but not impacted (NI) by the proposed action.

#### **1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change**

The assessment of Green House Gas (GHG) emissions, their relationship to global climatic patterns, and the resulting impacts is an ongoing scientific process. It is currently not feasible to know with certainty the net impacts from the Proposed Action on climate—that is, while the Proposed Action may contribute to the climate change phenomenon, the specific effects of those actions on global climate are speculative given the current state of the science. The BLM does not have the ability to associate a BLM action's contribution to climate change with impacts in any particular area.

Currently there is no acceptable way to provide a quantitative analysis of the impacts land management actions may have on climate change. The Federal Greenhouse Gas Accounting and Reporting Guidance (DOE 2010) recognize that "reporting of emissions and sequestration as a result of land management practices is not required at this time".

The Federal Greenhouse Gas Accounting and Reporting Guidance indicates that, for the purposes of Federal land managers, biological sequestration occurs when atmospheric carbon is absorbed by plants or soils. Land management techniques, including changes in land use or land management strategies, can and do have a significant effect on atmospheric carbon release and biological sequestration. Within a parcel of land, carbon stocks may decrease (when carbon is released into the atmosphere through combustion and decay) or increase (when carbon is stored during tree growth or through soil absorption).

Biological sequestration is the net increase of carbon stored within a parcel of land over time, while the net decrease is considered an emission. In other words, a standing forest that exists today is not, in and of itself, considered sequestration, but any additional carbon that is stored within that forest as it grows over time would be considered sequestration.



Agency-level reporting of emissions and sequestration as a result of land management practices is not required at this time (Federal Greenhouse Gas Accounting and Reporting Guidance (DOE 2010)). In addition, reporting of emissions from wildfire management, prescribed burning, land-use, and land-use changes is not required.

The calculations for sequestration are complex, especially when multiple ecosystem types and a variety of management practices are considered. Currently, EPA prepares an annual report on the National Inventory of Greenhouse Gas Emissions and Sinks at the national scale, which is appropriate for national and international discussions. The data in that report, however, are too coarse to address the effects of specific federal land management practices on GHG emissions, sequestration, and fluxes.

While climate change, GHG emissions, and carbon sequestration will not be carried forward for detailed analysis in this EA; BLM is addressing climate change on a more regional scale through its Rapid Ecological Assessments. The Rapid Ecological Assessment for the Colorado Plateau was finalized in May 2012 (Bryce et al, 2012). Both climate change and invasive species, particularly cheatgrass, were identified as change agents in the region. Regionalized predictions of climate change and regionalized impacts to vegetation communities and wildlife habitat can be found in the final report and associated data sets.

### **1.8.2 Externally Proposed Wilderness**

On November 6<sup>th</sup>, 2013 the Southern Utah Wilderness Alliance presented its scoping comments to the BLM concerning the proposal. SUWA pointed out on page five of its letter that there was a need to remove proposed vegetation treatments from lands proposed for wilderness designation in America's Red Rock Wilderness Act (ARRWA). A second set of comments submitted by SUWA on May 15<sup>th</sup>, 2014 pointed out on page 5 that the BLM must consider an alternative that removes treatments from lands proposed for wilderness designation in ARRWA. Lands found by the BLM to possess wilderness characteristics were recognized by the BLM as a potential impact (PI) and are discussed in Chapters 3 and 4. This section will discuss only lands that are in the ARRWA proposal, but not lands the BLM has already identified as Non-WSA lands with wilderness characteristics.

As discussed in Section 1.4, the project is intended to meet the goals, objectives and management decisions in the Price RMP (BLM, 2008) that direct the Price Field Office to meet the following:

- Manage and mitigate activities to restore, sustain, and enhance the health of plant associations, enhance or restore native and naturalized plant species, and enhance biological and genetic diversity of natural ecosystems (pg.69);
- Maintain, protect, and enhance wildlife habitats to support natural diversity and to provide healthy, self-sustaining populations of wildlife species; in order to supply recreational, educational, and scientific benefits and opportunities to the public (pg.81);
- Manage fire and fuels to restore natural ecosystems to their desired future condition (pg.89);
- Reduce risks and restore ecosystems through fuels management (FIRE-2 Pg. 89);
- And, use fuel management strategies (e.g., prescribed fire, mechanical, chemical, biological, hand treatments and wildfire) to meet desired future conditions (FIRE-5 pg. 90).



In order for the project to meet the purpose and need identified in Sections 1.3 and 1.4 it is imperative that the treatment units identified by the BLM be treated as identified to facilitate the restoration of grass, shrub, forb and sagebrush/shrubsteppe communities and to restore understory diversity to pinyon/juniper woodlands that support crucial deer winter ranges to a functional and self-sustaining vegetative community while protecting the area from further cheatgrass invasion and wildfires. This document will analyze impacts that will be expected from the proposed treatment to the resources that have been identified.

Therefore, the issue of an externally proposed wilderness will not be carried forward for further analysis. The BLM acknowledges the proposed project does have Non-WSA lands with wilderness characteristics, and they are analyzed in chapters 3 and 4 of this EA.

## **1.9 Summary**

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has considered and/or developed a range of action alternatives. These alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

## **2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION**

### **2.1 Introduction**

Treatment goals in pinyon-juniper woodlands may be varied, although fuel load reduction, restoration of sagebrush communities, improvement of watersheds, and enhancement of forage production are common treatment objectives (Miller and Tausch, 2001). Research shows that increasing the treatment focus in these dense woodlands to a broad landscape scale can improve treatment effectiveness (Hann and Bunnell, 2001). “Restoration” of the project area does not necessarily imply an objective of returning an ecosystem to a condition that may have existed at a point in history, but rather the restoration of functional processes required to sustain resource values.

Tree removal and/or thinning are the primary management tools employed in the process of decreasing fuel loads and continuity in pinyon/juniper woodlands. With Stand Density Index (SDI) used as a measurement tool, thinning guidelines generally recommend reducing stands approximately 25% of maximum SDI or lower, which will open the canopy and allow an increase in understory species. SDI is based on the relationship between mean tree size and the number of trees per unit area in a forest stand. The maximum SDI for pinyon/juniper stands has not been fully determined, although ongoing studies generally reflect a maximum SDI of 415 for mixed stands (Page, BLM, 2006).



## 2.2 Alternative A – Proposed Action

The BLM proposed Cedar Mountain Fuels Reduction and Vegetation Restoration project would thin and reduce hazardous fuels including trees and heavy brush, utilizing several different treatment methods within approximately 59,498 acres of public land administered by the BLM's Price Field Office, Canyon Country Fire Zone. Of these acres, approximately 60-70% of the mesa top acres were previously manipulated in the 1950's and 1960's through chaining of pinyon and juniper woodlands and subsequent seeding of crested wheatgrass. This was done for watershed values and to provide livestock and wildlife habitat and forage. These acres would be re-treated as maintenance of the original project to reduce pinyon and juniper re-establishment for the restoration of previous and current objectives.

In addition, the FY 2012 Appropriations Act (Wildland Fire Management) clarifies the use of federal appropriated funds and provides legislative authority for the Secretary of Interior to enter into procurement contracts, grants, and cooperative agreements for hazardous fuels reduction activities on Federal and adjacent non-Federal lands for activities that benefit resources on Federal Land.

The project would be accomplished in several phases over approximately five to ten years; however, conflicts with other projects, extreme fire seasons, budgetary constraints, or other factors could extend the estimated project period to facilitate achievement of goals and objectives. Each phase of treatment over the life of the project would be divided into treatment units with each unit averaging between 50-500 acres. The specific amount of acreage for each phase and lands treated within an individual unit would vary dependent upon vegetation type and fuel loading, and a single unit may be treated at one time or in conjunction with another unit.

Phase 1 treatment units have been identified (Appendix K) and consist of the following treatment types:

**Cedar Mountain Phase 1 Treatments**

Treatment Type	Acres	% of Analysis Area
Bullhog	495	0.83%
Lop & Scatter	583	0.98%
Hand Pile	238	0.40%
Ponderosa Hand Treatments	27	0.05%
TOTAL	1343	2.26%

Future phases within the analysis area will provide treatment type and location information as it becomes available and additional NEPA will be completed prior to implementation by completing a Decision of NEPA Adequacy (DNA) document. DNA's will be added to the administrative record to ensure records are kept throughout all phases of the project.

Treatment design and methods to accomplish goals and objectives are discussed below.

### **Treatment Design and Methodology**



The goal of treating dense pinyon-juniper is to reduce the fuel hazard while restoring ecosystem health by reestablishing the natural variability, stability, and diversity of the vegetative community within the project area. In designing a specific fuel treatment prescription, techniques for reducing crown fire occurrence and severity may include (1) increasing canopy base height, (2) reducing canopy bulk density, (3) reducing forest canopy continuity and (4) reducing surface fuels.

Proposed treatment activities would involve hand cutting and piling; hand cutting with lopping and scattering of slash; mechanical shredding; seeding; prescribed fire; kiosk installation; and herbicide/biological controls. Woody surface materials and ladder fuels considered to have hazardous fuel potential would be cleared and scattered. Untreated islands of trees and buffered areas would be left in a mosaic pattern throughout the proposed treatment area to benefit wildlife and improve ecosystem function. Prescribed fire would be used in addition to and as a complement to mechanical treatments and could include pile burning as well as broadcast burning. Due to the unique and often irreplaceable ecological values that old-growth stands provide for animal and plant habitat, genetic diversity, and long-term climate records (Kaufmann et al. 1992; Miller et al. 1999) old-growth trees would be avoided (Appendix H).

There are several drainages within the collective project boundary in which treatment methods may be modified to protect prospective or existing aquatic or riparian resources. Canyons and drainages are areas most frequented by wildlife species and because drainages are also valuable components of the watershed, care will be taken to establish vegetative buffer zones (generally feathered and 100'-200') at the head of drainages and along ridge tops to enhance raptor habitat and provide for watershed integrity. Fuel reduction efforts in primary canyons and drainages would focus on reducing pinyon-juniper and invasive non-native plant species such as tamarisks.

Before project implementation standing timber in selected areas may be made available for wood harvest. In select areas, slash and debris from fuel management activities along designated roads or other accessible areas may be made available to commercially/public interests by permit for wood harvest. Permits and maps with available wood harvest areas will be available through the Price BLM Field Office (Price RMP pg.96 FOR-4). All wood harvest will be limited to designated routes only.

Any new routes created during project work as well as non-designated routes occurring within treatment areas would be rehabilitated to prevent further use by off-highway vehicle (OHV) users. Some areas would require rehabilitation techniques where appropriate, such as mechanical shredding, mechanical seedbed preparation, seeding, and the installation of signs stating 'closed to motorized vehicles' to prevent OHV use until the evidence of tracks is obscured by vegetation.

Standard Operating Procedures, Best Management Practices for Fuels Management Activities, and Herbicide SOP's are attached (Appendix E) and incorporated into this proposed action along with Best Management Practices for Raptors and their Associated Habitats in Utah (PFO RMP Appendix #5).

## **Mechanical Treatment**



Where soils are deeper and at higher elevations where moisture is more favorable to tree growth there are stands of extremely dense pinyon-juniper growth. Dense pinyon-juniper presents a challenge both from a fuel hazard perspective and as an impediment to restoration. Crown fire potential in these areas is significant because of canopy closure along with an abundance of dead woody fuels remaining on the surface. In accessible dense stands with flat terrain (less than 20% slope) and in areas where rocky outcrops are minimal, a mechanical chipper/shredder or “bullhog” would be used to achieve treatment goals. A bullhog “mechanically shreds” both green and dead trees as well as ladder fuels, scattering the remaining chipped materials (mulch) over the ground and redistributing the fuel load. A recent study shows that understory cover in mastication treatments was 15 times greater following two growing seasons, compared to untreated controls (Ross, Castle and Barger, 2012). Mulched material generated from bullhog treatments would eventually decompose, although future follow-up treatment with prescribed fire could be used in some areas to reach desired wildland fire condition. Units targeted for mechanical treatment and treatment design would be determined through coordination between the fuels staff and Price Field Office resource staff.

### **Manual Treatment**

Manual thinning is typically used in areas not suitable for mechanical treatment such as steep, rocky slopes and areas that require mitigation such as cultural or riparian. Selected portions of the proposed treatment area would be hand-cut and thinned with chainsaws by BLM and/or contract crews. Open areas in the pinyon-juniper would be created to mimic naturally-occurring gaps in size and spatial patterns. In units where stand densities are low and existing surface fuels shallow, hand crews could cut and scatter fuels over the ground for follow-up surface burning. In sparsely vegetated areas, scattered slash and debris would be left intact for soil stabilization and use by small mammal and reptile species.

While scattered fuels retain the surface fuel load necessary for future prescribed fire maintenance, the immediate fire threat is reduced because potential flame height and rate of spread are inhibited by the dispersion of fuels. In some of the more dense stands, hand-cut materials may be piled in specific areas to avoid scorching of live trees. Piles would be located at least ten feet from any green trees and natural openings of cleared vegetation would be utilized for pile placement in an effort to minimize scorch or mortality to residual vegetation. As in the cut and scatter method of fuels reduction, piling of cut materials redistributes the fuel load for future follow-up burning. Vegetation removed through all methods would be selected based on hazardous potential, restoration goals, and retention of the existing character of the landscape. Thinning of living, diseased, and other trees would occur in selected areas to decrease stand density while giving consideration to wildlife habitat.

### **Prescribed Fire**

A low intensity understory burn in the Ponderosa pine would provide the most cost-effective and efficient treatment of fuels. Development of the burn prescription would include low-moderate fire intensity to allow mortality of small forbs and shrubs and remove built-up surface litter.

The broadcast burn and/or pile burning follow-up treatments would be planned for late fall, winter, or spring periods when fuel and site moisture conditions were high, to avoid fire damage to adjacent vegetation. A detailed burn plan would delineate weather and fuel moisture conditions required to meet fuels reduction and resource objectives. Ignition of the burn would



be conducted by hand (drip torches using a diesel/gasoline mixture), aerial ignition, or by truck-mounted terra torch (utilizing a gasoline/alumagel mixture). Aerial ignition would include Plastic Sphere Dispenser (PSD) and/or helitorch operations. Helitorches can produce more heat and are useful when weather conditions are moist and cool or when burning damp fuels. PSD burning is more efficient under drier, warmer conditions. A combination of both methods can be used if there are widely varying fuel and moisture conditions throughout the units.

During the burning of debris, natural and man-made barriers (i.e. hand line or mechanically constructed) and/or an established wet line could be used as control lines. Smoke management would consist of burning when clearing indices comply with Utah Smoke Management Plan guidelines, in order to reduce localized haze and smoke inversion and to provide for maximum smoke uplift and dispersal. To prevent cumulative air quality impacts from simultaneous treatment projects or wildland fires, any portion of the proposed project involving burning would undergo interagency cooperation and consultation prior to implementation.

The use of fire in sagebrush parks can force a conversion to grassland, which would be of detriment to habitat value. For this reason, treatment of sagebrush areas would consist only of manual cutting and piling or mechanical shredding. Any piled material would be burned under conditions which minimize fire spread and damage to the sagebrush community.

### **Seeding**

Units within the entire project area may be seeded following or prior to treatment with both native and selected non-native grasses, forbs and browse species. Areas previously treated in 1967, including crested wheatgrass/russian wildrye seedings may be interseeded. Seed selection would be determined through collaboration with resource specialists and from monitoring results in similar vegetative communities. Seed selection (appendix G) would also be based upon the most current data regarding the establishment of species likely to promote successional changes toward the desired vegetative community.

Seeding would be accomplished by dragging a broadcast spreader or harrow behind an ATV, tractor or dozer, through the use of a rangeland drill, or by aerial methods. Seeded portions of the treatment area would be rested from grazing for a minimum of two growing seasons following seeding (Rangeland Health Standards and Guidelines Appendix 7 pg.4 #13 Price RMP). Livestock would be kept out of pastures with the use of existing pasture barriers (fences and topographic barriers) in most areas, or new fencing could be required to create pastures in some areas. Temporary water developments could be used to provide livestock watering locations in newly created temporary pastures. Water developments would be limited to the installation of solar powered or gas powered water pumps on existing water developments, temporary above ground waterlines and seasonal placement of water troughs. A change in beneficial use of existing water rights may be required to allow for a change in the point of beneficial use. In the event a single pasture contained several seeded units the pasture could be closed for use entirely until treatment goals were achieved. Treatments would be scheduled over several years to avoid cumulative impacts to grazing permittees. Cattle could be allowed in the area of the proposed action sporadically during the treatment timeframe.

### **Kiosk Installation**



Disseminating information to the public on project intentions, goals, objectives and successes is a vital part of healthy ecosystem education. One of the major ways to present this information is by using kiosks located in or around the project area. Kiosk size depends on the amount of space needed to convey the fuels treatment message. Kiosks generally measure approximately 8' tall x 4' wide. Installation requires digging two post holes (2-3' deep) using an auger and cementing two 4" x 4" posts permanently into place.

### **Herbicide**

In cheatgrass monocultures and in existing sagebrush stands where perennial species are lacking and cheatgrass is present in the understory, herbicide may be necessary. In general, current cheatgrass populations in the project area are a secondary component of the composition in the vegetative communities. Herbicide control would be in response to cheatgrass response post vegetation treatment that may negatively influence rehabilitation efforts. To control cheatgrass, Imazapic (active ingredient) herbicide may be applied either aerially or by ground. Imazapic may be used to treat degraded rangeland in need of revegetation. Areas selected for herbicide application would be treated according to manufacturer's specifications.

Herbicide application would be carefully recorded and documented. Herbicide use information would be reported to the BLM Utah State Office and the BLM Washington Office. A pesticide use proposal (PUP) would be prepared and approved by the BLM Utah State Office prior to application of the herbicide. The BLM PFO would follow the applicable standard operating procedures (SOP's) for applying herbicide as listed in the Record of Decision Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS (2007, appendix C). Only registered herbicides that are approved for use on BLM administered lands and applied according to the label would be used.

### **Biological**

Goats and/or sheep may be used to help in the control of woody species within the project area. Woody Species such as Gambel oak are less susceptible to traditional shrub control techniques (i.e. fire, herbicides, mechanical control) than associated species (Kufeld 1983). Studies have shown that browsing can have a severe (78%) reduction in Gambel oak, while having a strong positive response in sagebrush productivity (Riggs and Urness, 1989). Units targeted for biological treatment and treatment design would be determined through coordination between the fuels staff and Price Field Office resource staff.

### **Monitoring**

Collaboration between agencies is a critical step in adaptive management of vegetative communities in southeastern Utah. The Canyon Country Fire Zone has taken the lead in an effort to combine datasets such as past fire occurrence and fuels treatments with newer treatment data from cooperating agencies in southeastern Utah to create a comprehensive look at collective activities on a landscape scale. Monitoring of treatments including documentation of seeding success in sagebrush parks is invaluable in planning for future sagebrush/grassland treatments. Transects and/or photo plots to document fuel load and vegetation composition may be established for this treatment, both before and after mechanical treatment as well as prescribed burning.



Research and monitoring results would be incorporated into management decisions regarding future resource treatments that could include maintenance burning, additional seeding, additional mechanical treatments, and/or other actions. Management decisions requiring treatments not previously analyzed could initiate further environmental assessment.



**Desired Visual Aesthetic Following Fuel Reduction**

### **Desired Future Condition and Project Results**

The desired outcome of the project would include: 1) Protection of infrastructure areas from high intensity wildfire; 2) reduction of the continuous tree canopy to decrease the probability of resource damage from a high-intensity, stand-replacing wildland fire; 3) a decrease in tree density and an increase in age-class difference to provide visual variety and biological diversity; 4) the re-establishment of vegetative diversity, vigor, and resilience, resulting in better forage and habitat for wildlife and livestock; 5) a return to a more historic fire regime where low-intensity fire can be utilized to maintain the health and vigor of the vegetative community.

### **2.3 Alternative B – No Action**

No management action involving fuels treatment would occur to reduce fuel loads or to change the current vegetative condition. Suppression of wildland fire would continue under the current policy, and management of other resources in the area would not change. Future reactive actions such as emergency stabilization and rehabilitation could be applied in response to wildland fire, but no further proactive fuels treatments would be implemented in the near future to reduce the threat from wildland fire to improve watershed conditions, or to enhance forage and wildlife habitat in the area of the proposed project. Fuel loading would continue to increase due to juniper expansion and infilling which would lead to loss of ecosystem function. Fire threat to WUI areas, cultural resources, sagebrush communities, watersheds, elk and mule deer winter range would remain high.

### **2.4 Alternatives Considered, but Eliminated from Further Analysis**

An alternative was considered that would eliminate treatments from Non-WSA lands with wilderness characteristics. The Price ROD RMP/EIS (pages 35-36) made the determination that all of the non-WSA lands with wilderness characteristics within the proposed treatment area would not be managed for those characteristics. Furthermore, analysis of the No Action Alternative would encompass the range of possibilities, including no treatments in Non-WSA



lands with wilderness characteristics, providing sufficient baseline information for a reasoned decision. Therefore, this alternative will not be carried forward for further analysis.

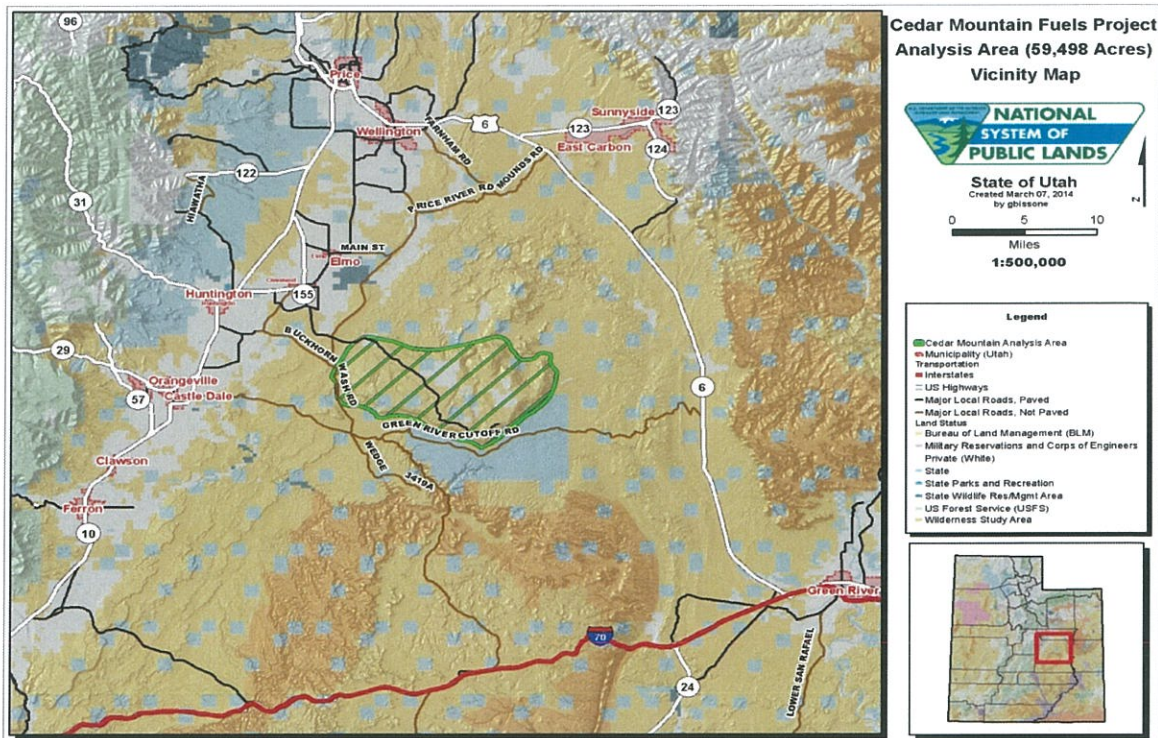
### 3.0 AFFECTED ENVIRONMENT

#### 3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix A and presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

#### 3.2 General Setting

The project area is located on Cedar Mountain. Cedar Mountain is located west of Highway 6 and southwest of Price, Utah. The project is located entirely within Emery County. Emery County, located in southeastern Utah is bordered on the north by Carbon County, on the west by the Wasatch Plateau, the south by an artificial boundary with Wayne County and on the east by the Green River.



Occupation of this area dates back thousands of years to the Archaic Period from 500 A.D. to 1300. Evidence of the people can still be found in the area and are evident by numerous pictographs and petroglyphs found throughout the Cedar Mountain area.

Current and historical uses of the area include: the Denver and Rio Grande railroads, livestock, farming and coal mining.

Emery County covers about 2,850,100 acres. Land ownership is broken down in the chart below:

<b>Emery County Land Ownership (acres)</b>		
Land Owner	Number of Acres	Percentage of Total
BLM	2,061,000	72
USFS	211,000	7
National Park Service	2,100	<1
State	348,000	12
Private	228,000	8

\*Information found in Price Resource Management Plan (2008)

The elevation in the general area ranges from 5,417-7,661 feet with infrastructure (radio towers & developed recreation sites) in and around the project area. Yearly average temperatures range between 12 and 89 degrees. Precipitation averages 10-14 inches annually.

Fire occurrence and size varies from year to year in this area depending on the amount of moisture associated with lightning-producing thunderstorms. Pinyon and Juniper woodlands and surface fuels are the primary fire carrier in the area, with high fire intensity a direct result of high stand density and weather conditions. Portions of Utah have been experiencing intermittent drought conditions over the past decade which have depleted both soil and fuel moistures in drought years. Drought stress can increase vulnerability to insects and disease, and persistent low fuel moistures increase tree flammability. Combined, this vulnerability increases the probability of high intensity fire. A hot, intense wildland fire occurring in this particular area could create unstable slopes, damage watersheds, increased erosion and/or sedimentation, charred soils and vegetation, loss of crucial habitat, and possible economic loss.

### **3.3 Resources/Issues Brought Forward for Analysis**

#### **3.3.1 Air Quality**

The project area is located in Emery County in east-central Utah on the south of the Wasatch-Uinta Mountains and east of the Manti Mountains. The nearby mountains influence the climate of the adjacent areas. Wide seasonal temperature variations typical of a mid-continental climate regime are common. The project area is subject to prolonged and intense inversions, which occur in both winter and summer. Inversions are most severe in the winter when snow cover and shorter daylight hours combine to intensify the difference between cold air at the surface and



warmer air aloft. Inversions are more frequent and last longer in the valleys where air movement is relatively restricted. The depth of the cooler air defines the mixing height and determines the volume in which air pollution emissions are confined. Prolonged inversion conditions with low mixing heights create a buildup of pollutants confined in this smaller volume. During the summer, the early morning inversions are generally dissipated by sunshine warming the air near the ground. During the winter, inversions may persist until a strong storm system moves through the region.

Existing point and area sources of pollution within the project area include the following:

- Exhaust emissions (primarily CO, NO<sub>x</sub>, PM<sub>2.5</sub>, and HAPs) from existing natural gas fired compressor engines used in transportation of natural gas in pipelines;
- Natural gas dehydrator still-vent emissions of CO, NO<sub>x</sub>, PM<sub>2.5</sub>, and HAPs;
- Gasoline and diesel-fueled vehicle tailpipe emissions from coal mining and processing;
- Fugitive dust (in the form of PM<sub>10</sub> and PM<sub>2.5</sub>) from vehicle traffic on unpaved roads, wind erosion in areas of soil disturbance, and road sanding during winter months;
- Long-range transport of pollutants from distant sources.

National Ambient Air Quality Standards (NAAQS) have been promulgated for the purpose of protecting human health and welfare with an adequate margin of safety.

Pollutants for which standards have been set include sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), CO, ozone (O<sub>3</sub>) and particulate matter less than 10 microns in diameter (PM<sub>10</sub>) or 2.5 microns in diameter (PM<sub>2.5</sub>). Existing air quality in the region is acceptable based on EPA's NAAQS. The surrounding area is designated as an attainment area, meaning that the concentration of criteria pollutants in the ambient air is less than the NAAQS. Site-specific air quality monitoring data are not available for the project area.

Airborne particulate matter consists of tiny coarse-mode (PM<sub>10</sub>) or fine-mode (PM<sub>2.5</sub>) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. PM<sub>2.5</sub> is derived primarily from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM<sub>10</sub> is primarily from crushing, grinding, or abrasion of surfaces. Sources of PM include industrial processes, power plants, mobile sources, construction activities, and fires. With regard to mobile sources, more PM is emitted into the atmosphere from the use of diesel fuel than the use of gasoline.

PM causes a wide variety of health and environmental impacts. Many scientific studies have linked breathing PM to significant health problems, including aggravated asthma, increased respiratory symptoms, such as coughing, and difficult or painful breathing, chronic bronchitis, decreased lung function, and premature death. PM is the major cause of reduced visibility and can stain and damage stone and other materials, including culturally significant objects, such as monuments and statues. The State of Utah is in the process of identifying areas that are experiencing high PM<sub>2.5</sub> levels and identifying potential strategies to improve air quality in those areas.

In Utah elevated PM<sub>2.5</sub> concentrations along the Wasatch Front are associated with secondarily formed particles from sulfates, nitrates, and organic chemicals from a wide variety of sources. In



the Cache Valley of northern Utah approximately half of ambient PM<sub>2.5</sub> during elevated concentrations are composed of ammonium nitrate, most likely from agricultural operations, with the rest from combustion, primarily mobile sources and woodstoves. For comparison, PM<sub>2.5</sub> in most rural areas in the western United States is typically dominated by total carbonaceous mass and crustal materials from combustion activities and fugitive dust respectively.

The project area is designated as attainment or unclassified under the Clean Air Act, meaning that the concentration of criteria pollutants in the ambient air is less than the National Ambient Air Quality Standards (NAAQS), or adequate air monitoring is not available to make an attainment determination. NAAQS are standards that have been set for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM<sub>10</sub>) or fine-mode (PM<sub>2.5</sub>) particles or aerosols combined with dust, smoke, or liquid droplets. PM<sub>2.5</sub> is derived primarily from the incomplete combustion of fuel sources and secondary formed aerosols, whereas PM<sub>10</sub> is primarily from crushing, grinding, or abrasion of surfaces.

### **3.3.2 BLM Sensitive Plant Species**

BLM Special Status Species, Thompson's talinum (*Talinum thompsonii*; *Phemeranthus thompsonii*) has been identified on Cedar Mountain. The most recent surveys (Smith 1994) identified approximately 960 acres of occupied habitat and approximately 6,500 individuals. This estimate is thought to be low because there is potential habitat that has not been surveyed to date.

Thompson's talinum is described as a low, clump-forming perennial herb with fleshy leaves less than an inch long. The plants occur in open areas within pinion and juniper communities or sagebrush communities. The plant appears to be restricted to the Buckhorn conglomerate formation in shallow soils (3-8 cm deep) which are very gravelly. The soil surface is comprised mainly of rounded siliceous pebbles. Identified threats to the species, include lack of adequate rainfall, recreational disturbances, road construction, natural erosion, plant collectors, and herbivory.

### **3.3.3 Cultural Resources**

Previous investigations of the surrounding and immediate area indicate the presence of significant cultural resources within the proposed project area. A cultural resource may be defined as prehistoric and historic districts, sites, buildings, structures, and objects that represent past human activities. Human occupation of the study area spans the last 10,000 to 12,000 years. The cultural sequence represented potentially includes Paleo-Indian, Archaic, Puebloan, Paiute and historic European cultures. The semi-arid climate contributes to a remarkable degree of preservation of cultural material. These often well preserved sites and artifacts are valued not only by the scientific community, but also Native American Tribes, private organizations, the local community, and interested parties worldwide for their scientific, religious, cultural, and recreational significance.

Natural processes, including erosion, fire, decay of organic material and destruction by animals native to the area can result in adverse impacts to cultural resources. Over time, these natural



processes have the potential to alter or completely destroy an archaeological site. Human activities, intentional or not, can greatly alter the rate at which sites are impacted in both positive and negative ways. Intentional activities, such as vandalism, looting, or improper management of the local environment can increase the rate at which sites are destroyed. However, purposeful and scientifically sound management of surrounding resources can result in improved preservation of these non-renewable resources.

#### **3.3.4 Fish and Wildlife Excluding USFW Designated Species**

The proposed treatment is located within crucial mule deer winter range. "Crucial winter range" is considered to be the portion of a local deer and elk range where approximately 90 percent of the local population is located during an average of five winters out of ten from the first heavy snowfall to spring green-up. Winter range habitat primarily consists of shrub-covered, south-facing slopes and is often considered a limiting factor for mule deer and Rocky Mountain elk in the intermountain west.

Because of learned behavioral use patterns passed on from one generation to the next, deer migrate for the winter into the same areas every year, regardless of forage availability or condition. These are generally areas lacking in snow depth, which allow for easier movement, within pinyon-juniper and sagebrush vegetation types. These vegetation types provide deer with both escape and thermal cover. Sagebrush is their primary forage during the winter season. Current mule deer population levels are extremely low for the San Rafael Wildlife Management Unit, partially attributed to extended years of drought which lowered animal vigor and herd productivity. While the herd unit as a whole is very slow in recovering, general populations are recovering at a more moderate rate. Pinyon-juniper benches and sagebrush parks are critical for the San Rafael Wildlife Management Unit as well as for Rocky Mountain elk. Lower elevation salt desert shrub bottoms represent high priority yearlong range for pronghorn antelope.

#### **3.3.5 Fuels/Fire Management**

Outdated livestock grazing management practices combined with an aggressive fire suppression program and several continuous years of drought have influenced the natural fire regime within the proposed project area. Most fires were started by lightning and burned in large patches creating a mosaic of open meadowlands. Throughout the area, these historic low-intensity fires prevented the build-up of high density fuels by periodically clearing away brush, small trees, and dead and downed trees.

Presently, the dominant vegetation in the area is pinyon juniper. Several small meadows are scattered throughout the wooded area containing grasses, sagebrush and other woody shrubs. A successful treatment in this area would result in fire moving from the tree canopy to the ground through reduction of a continuous canopy. Fire would then spread through perennial grasses, forbs and shrubs, burning at a lower intensity and resulting in safer and more efficient fire control.

The proposed action falls generally within FMU 7, Cedar Mountain, and located 30 miles south of Price, Utah. Values at risk within this FMU include: Cedar Mountain Recreation Site, Cedar Mountain Communications Site, and the I-70 corridor. The FMP recommends fuels management strategies such as prescribed fire and mechanical and/or other types of treatment to reduce hazardous fuel conditions and increase high value browse and herbaceous production



(Canyon Country Fire Zone FMP, page 27). Wildland fire is undesirable in mature pinyon-juniper stands utilized as thermal cover by wildlife, although low intensity fires in previously chained areas are recommended for fire management to remove undesirable vegetation. Historical data shows a total of 29 fires occurring in and around the project area (Appendix C)

### **3.3.6 Invasive Species/Noxious Weeds**

Non-native plant invasion is one of the most important issues facing land management agencies today because of the ability of invasives to permanently alter ecosystems. Annual invasive species such as cheatgrass (*Bromus tectorum*), halogeton or salt lover (*Halogeton glomeratus*) and Russian prickly thistle (*Salsola tragus*) are interspersed throughout the project area on both public and private lands in the Cedar Mountain area.

Annual plants like cheatgrass grow from seed, flower, set seed, and die every year which is the opposite of the cycle followed by common native perennial bunchgrasses. In addition, cheatgrass can germinate in early fall when conditions are optimum and will grow throughout fall and winter, giving it an added advantage over native grasses. Although cheatgrass may be utilized as browse during a brief time in the early growth cycle, it is generally not considered as a viable long term browse species for wildlife or livestock. Cheatgrass is especially competitive with perennial plants after wildland fire due to its low nitrogen requirements and rapid growth. Other non-native, noxious weeds and invasive species within the project area include tamarisk, halogeton and Russian prickly thistle.

Tamarisk infestations exist along the drainages and low lying areas where water accumulates. Currently there is not an active control program for tamarisk in the Cedar Mountain area, however the tamarisk leaf beetle (*Diorhabda elongata*) has been found just south of Cedar Mountain at lower elevations in the Buckhorn draw area.

Halogeton and Russian prickly thistle infestations are limited in the Cedar Mountain area to the edges of the roadways and trails. Currently there are no known infestations of halogeton and Russian prickly thistle outside of the roadways and trails.

There are no known populations of noxious weeds throughout the project area with the exception of tamarisk, which is a Utah State listed noxious weed. (See appendix F for the Utah noxious weed list).

### **3.3.7 Livestock Grazing**

The proposed project area is within the boundaries of three grazing allotments (Cleveland Summer, Johnson Huff Hollow and Huff Bench). There are nine grazing permittees authorized to graze cattle and horses on the Cleveland Summer allotment from May 1 to September 30 and 3 grazing permittees authorized to graze cattle and horses on the Johnson Huff Hollow and Huff Bench allotments from June 1 to October 15. The permittees own private land within the allotments and lease state land within the allotments. The allotments are physically divided from each other by fences or natural barriers.

Cattle seldom utilize the areas proposed for treatment for foraging opportunities due to a scarcity of forage and minimal water sources. Existing range improvements in the project area include



stock ponds, fences and developed springs. These range improvements may occur in proposed treatment areas.

The most recent Rangeland Health Standards assessments indicate that the allotments are meeting all rangeland health standards including soils, sensitive species habitat, riparian/wetland areas and clean water. Grazing permittees are fully supportive of the proposed action, and are amenable to grazing restrictions following seeding.

### **3.3.8 Soils**

The development of soils is governed by many factors, including climatic conditions (the amount and timing of precipitation, temperature, and wind), the parent material that the soil is derived from, topographic position (slope, elevation, and aspect), and vegetation type and cover. The soils in the project area are derived from shales and sandstone. The soils are fine sandy loams to silty loams, and saline, rangeland with pinion juniper and other tree stands; unfit for farmland.

The five largest soil complexes are:

- 1) Boknoll-Stephouse-Rock outcrop complex. These are found on 3 to 15 percent slopes. Gravelly very fine sandy loams. Zero to slight saline.
- 2) Bobknoll-Wimmer complex. These are found on 2 to 5 percent slopes. Very fine sandy loams. Zero to slight saline.
- 3) Bunkin-Rock outcrop-Pillow complex. Found on 3 to 15 percent slopes. Very gravelly fine sandy loams. Zero to slightly saline.
- 4) Bunkin-Rock outcrop-Stephouse complex. Found on 5 to 45 percent slopes. Up to 35 percent surface area covered in boulders, cobbles and rocks. Very gravelly very fine sandy loams. Zero to slightly saline.
- 5) Cedar Mountain-Neveuset-Pacon complex. Found on 10 to 45 percent slopes. Stony loam. Slight to moderately saline.

### **3.3.9 Water Resources/Quality**

Precipitation data was obtained from the Castle Dale weather station, which has records summarized for the period 1928-2006. The average annual precipitation at the Castle Dale location is 7.75 inches. For the 20 year period 1987-2006, normal precipitation levels (6-10 inches) were received over 10 years: 1988, 1990, 1991, 1992, 1995, 1996, 1998, 1999, 2000, 2001, and 2005. Severe drought conditions (<65% of normal or <6 inches) prevailed five years; 1989, 1994, 2002, 2003, and 2006. Above normal precipitation levels (>130% or >10 inches) were also received over five years: 1987, 1993, 1997, and 2004.

High intensity, short duration thunderstorms occur in late summer and about half of the annual precipitation falls between May and September (BLM, 1987). Snowfall accounts for a smaller percentage of the annual precipitation and the area is covered with snow for an average of 33 days during the year. Temperatures range from 95° Fahrenheit in the summer to sub-zero in the winter. The frost-free period is usually 120 to 140 days.

The project generally encompasses the Cedar Mountain, southeast of Cleveland, Utah. Any flows that escape the project area flow into the Price River to the east, and the San Rafael River to the southwest. The climate is dry, with little surface flows leaving the project area. The largest



washes that flow from the project area include Bull Hollow Wash, Humbug Wash, and an unnamed wash that drains into Buckhorn Wash near the south end of Buckhorn Reservoir.

Springs on the project area are illustrated in the following table:

Spring Name	Estimated Flow	Developed Yes/No	Land Management Status
Gooseberry Spring	0.015 cfs	No	BLM
Huff Spring	0.030 cfs	Yes	Private
Birch Spring	0.030 cfs	Yes	Private
Wiregrass Spring	0.015 cfs	Yes	BLM
Ware Spring	0.018 cfs	Yes	BLM
Mud Spring	0.015 cfs	Yes	State of Utah
Goat Spring	0.002 cfs	Yes	BLM (PWR)
Bull Hollow Spring	0.025 cfs	Yes	BLM

### 3.3.10 Woodland/Forestry

In southeastern Utah, the woodlands are primarily mixed stands of Utah juniper (*Juniperus osteosperma*) and both singleleaf and two-needled pinyon (*Pinus monophylla* and *Pinus edulis*). The current vegetation composition within the proposed treatment areas is dominantly a mature 60 to 80-year-old pinyon/juniper stand. The natural fire regime in the entire area has been altered as a direct result of livestock grazing management and fire suppression practices. The proposed treatment areas include areas that have been designated as approved fuelwood harvest areas and/or Christmas tree harvest areas.

Approximately 60-70% of the mesa tops were previously manipulated in the 1960's through chaining of pinyon and juniper woodlands and subsequent seeding of crested wheatgrass. The treatment was done for watershed values and to provide livestock and wildlife habitat and forage. The treatment areas were not maintained, and as a result, the pinion and juniper trees have formed dense, closed canopy stands. Due to the closed canopy nature of dense pinyon-juniper stands, understory vegetation does not have the ability to compete for essential resources such as moisture and sunlight, which prevents understory vegetation from establishing or surviving in these conditions. With the increase of pinion and juniper, there has been an increase in fuel loads and the possibility for a high-severity wildfire in the area. Increased fire size and intensity could put local infrastructure in the Cedar Mountain area at risk.

Tree removal and/or thinning are the primary management tools employed in the process of decreasing fuel loads and continuity in pinyon/juniper woodlands. With Stand Density Index (SDI) used as a measurement tool, thinning guidelines generally recommend reducing stands approximately 25% of maximum SDI or lower, which will open the canopy and allow an increase in understory species. SDI is based on the relationship between mean tree size and the number of trees per unit area in a forest stand. The maximum SDI for pinyon/juniper stands has not been fully determined, although ongoing studies generally reflect a maximum SDI of 415 for mixed stands (Page, BLM, 2006).

### 3.3.11 Vegetation Excluding USFW Designated Species



Native vegetation presently occurring in the project area consists of pinyon and juniper, Wyoming big sagebrush, Indian ricegrass, needle and thread, blue grama, scarlet globemallow, and other minor grasses and forbs. Approximately 4400 acres of sagebrush flats and pinyon/juniper woodland were treated on federal land within the Cleveland Summer allotment in 1967. These areas were seeded with a mix of crested wheatgrass, Russian wildrye and fourwing saltbush. The seeded areas contain a fair stand of crested wheatgrass and Russian wildrye. Areas with the 1967 treatment project may be retreated to maintain or enhance the existing vegetation community. The proposed action will focus mainly on areas where Utah juniper and pinon overstory is dense with minor forbs and grasses present in the understory.

An ecological site (ESD) is generally considered an area of land with specific physical characteristics that produces a distinctive type and amount of vegetation. ESDs contain an interpretation of major plant species, composition, cover, and dynamics as well as soils, precipitation patterns, elevation and topographic information, and are often utilized to formulate adaptive management actions to achieve desired future condition for range, wildlife, and/or hazardous fuel treatments. The dominant ESDs within the project area that are subject to treatment are the Upland Shallow Loam (Pinyon - Utah Juniper) ESD and the Upland Loam (Wyoming Big Sagebrush) ESD.

#### **3.3.12 Non-WSA Lands with Wilderness Characteristics**

Non-Wilderness Study Area (WSA) lands with wilderness characteristics are defined as areas having at least 5,000 acres in a natural or undisturbed condition that provide an outstanding opportunity for solitude and/or primitive forms of recreation. Many of these areas are adjacent to or contiguous with WSAs. Detailed information about non-WSA lands with wilderness characteristics is part of the administrative record for the Price ROD RMP/EIS (October 2008). The following records are incorporated by reference: (1) 1999 Utah Wilderness Inventory; (2) 1999 Utah Wilderness Inventory Revision Document for the Price Field Office.

The Price ROD RMP/EIS identified “BLM Natural Areas”, non-WSA lands with wilderness characteristics that would be managed for the protection of their wilderness values, as well as non-WSA lands with wilderness characteristics that, based upon the analysis in the Price RMP/EIS, would not be managed for their wilderness characteristics.

The proposed treatment area intersects non-WSA lands within two wilderness inventory areas (WIA). Specifically, the non-WSA lands with wilderness characteristics analyzed for this treatment project include the Price River and Price River Ext. The Price ROD RMP/EIS (pages 35-36) made the determination that all of the non-WSA lands with wilderness characteristics within the proposed treatment area would not be managed for those characteristics. There are no BLM Natural Areas present in the proposed treatment area.

#### *The Price River and Price River Ext WIA*

The Price River and Price River Ext WIA is a large unit in size covering approximately 90,000 acres with wilderness characteristics. It extends from the mounds area on the north to the Cedar Mountain country on the south, with the Price River crossing through the northern half of the area and the Humbug country covering the southern half of the unit. During the PFO land use planning process, the Price River WIA non -WSA lands with wilderness characteristics were considered and thoroughly analyzed for the protection, preservation, and maintenance of those



wilderness characteristics as well as for the impacts that could occur if other resource developments and uses were allowed.

Table 3.15 provides a summary of lands within the project area and within the proposed treatment areas.

#### **Price River Unit**

<b>BLM Wilderness Characteristics Evaluation</b>	<b>Project Area Acres</b>	<b>Treatment Area Acres</b>
Excluded- Non- BLM Lands	9,278.6	619.6
Excluded- Size Limitation	12,008.8	1.4
Excluded- Lacks Wilderness Character	0	0
Possessing Wilderness Character	89044.3	16,472.9
<b>Total Acres</b>	<b>110,331.7</b>	<b>17,093.9</b>

#### **Price River Ext Unit**

<b>BLM Wilderness Characteristics Evaluation</b>	<b>Project Area Acres</b>	<b>Treatment Area Acres</b>
Excluded- Non- BLM Lands	0	0
Excluded- Size Limitation	0	0
Excluded- Lacks Wilderness Character	1,953.5	1612.6
Possessing Wilderness Character	604.5	604.5
<b>Total Acres</b>	<b>2,558</b>	<b>2,217.1</b>

Thus, there are 17,077 acres of lands that the BLM has determined to possess wilderness characteristics within the project area. Not all of the acres with wilderness characteristics will be treated. Impacts on non-WSA lands with wilderness characteristics (i.e. those lands which have been identified by the BLM as having wilderness characteristics including the appearance of naturalness and outstanding opportunities for primitive recreation or solitude), could include actions that maintain, protect, or improve wilderness characteristics or actions that result in the complete or partial loss of these characteristics.

Management actions that could impact an area's natural appearance could include managing for the presence or absence of roads and trails, use of motorized vehicles along those roads and trails, fences and other improvements, the nature and extent of landscape modifications, the presence/or lack of native vegetation communities, the connectivity of wildlife habitats, or other actions that result in or preclude surface disturbing activities. All these activities affect the presence or absence of human activity and, therefore, could affect an area's natural appearance.

Two other wilderness characteristics (i.e., outstanding opportunities for solitude or primitive, unconfined types of recreation) are related to the human experience in an area. Visitors may have outstanding opportunities for solitude or for primitive and unconfined recreation when the sights, sounds, and evidence of other people are rare or infrequent; where visitors can be isolated, alone,



or secluded from others; where the use of the area is through non-motorized, non-mechanical means; and where no or minimal developed recreation facilities are encountered.

## **4.0 ENVIRONMENTAL IMPACTS**

### **4.1 Introduction**

This chapter provides a summary of the environmental impacts of the proposed action and the no-action alternative. The discussion of environmental impacts focuses on how the proposed action and no action alternative meet the purpose and need and address key issues. The issues evaluated here were determined by the responsible officials to be the key issues related to the proposed action, based on feedback from agency specialists, the public and cooperating partners.

### **4.2 Direct and Indirect Impacts**

Potential impacts to the resources of concern identified in the analysis and planning stage of the proposed project are considered below.

Impacts may be direct or indirect and may include both beneficial and detrimental (adverse effects). Direct impacts may be caused by an action occurring at the same time and place as the proposed action, while indirect impacts may result from the proposed action but may occur later in time. Direct and/or indirect effects to resources from the proposed action are identified below by treatment activity within each resource potentially affected for the 59,498 acre landscape-level treatment (Collective Treatment Area).

#### **4.2.1 Alternative A – Proposed Action**

##### **4.2.1.1 Air Quality**

The burning of slash debris and follow-up prescribed fire would temporarily increase the particulate matter and gasses in the atmosphere for the duration of the proposed treatment. Prescribed fire allows the control of produced emissions and although smoke may likely collect in nearby valley bottom areas for a short time following burning, emissions would be of minimum duration and intensity compared with that of a large wildland fire event.

As discussed under the proposed action, smoke management would comply with Utah Department of Air Quality (DAQ) regulations, which are in place to provide for maximum smoke uplift and dispersal to reduce localized haze and smoke inversion. In addition, burning would be limited to periods of time that meet current DAQ clearing indices. Compliance with these regulations would ensure that there are no long-term effects to public health or visibility from the proposed project.

During implementation of the project, dust particulates would increase. This would reduce to background levels as vegetation recovers.

##### **4.2.1.2 BLM Sensitive Plant Species**

Impacts to Thompson's talinum are expected to be minimal. Identified threats to the species, include lack of adequate rainfall, recreational disturbances, road construction, natural erosion, plant collectors, and herbivory. Implementation of the proposed action will not increase recreational disturbances, road construction, plant collecting, or herbivory.



In 1994 field surveys identified 960 acres of occupied habitat for the Thompson's talinum on Cedar Mountain. The proposed project area overlaps 160 acres or roughly 16 percent of the known habitat. If implementation of fuels reduction action occurred within occupied habitat it could result in habitat degradation through trampling, soil compaction, and increased erosion. The plants could be directly impacted through trampling from bullhog machines, and hand cut crews. Soil compaction could result in decreased water infiltration to the plants, which could be significant factor in the arid and semiarid lands where water is a limiting factor. With the removal of vegetation, there could be an increase in soil erosion which can cause changes in topsoil and biological soil crusts if present.

However, the plant is only known to occur in the open areas within pinion and juniper communities or sagebrush communities, as such, it is unlikely that fuel reduction activities will occur within the small pockets of occupied habitat. Forty-five acres of the occupied habitat for Thompson's talinum is within planned bullhog units. Bull hog treatments are planned for use in areas of dense trees, the open gravel areas will be avoided during the treatment thus the risk to the known populations will be minimal. One hundred and fifteen acres of identified occupied habitat is within planned hand cut units. Hand cut units will not use large equipment, thus reducing the risk of compaction and soil disturbance from machinery. With the implementation of the mitigation measures below, potential impacts to the Talinum species is expected to be negligible.

Care will be taken not to scatter trees into the open, gravelly areas that are potential habitat.

#### **4.2.1.3 Cultural Resources**

An assessment of impacts on cultural resources would be made in accordance with the Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations 36 CFR 800 prior to the undertaking. The assessment would determine the nature and extent of effects on cultural resources anticipated from implementing the proposed action.

Significant cultural resources include those resources that are listed, or are eligible for listing, in the NRHP. The criteria for evaluating the significance of cultural resources are set forth in 36 CFR 60.4. These criteria are designated in the four-tier letter code system (A, B, C, and D), presented below. Significance as it relates to American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

- Criterion A – are associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B – are associated with the lives of persons significant in our past;
- Criterion C – embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction;



- Criterion D – has yielded, or may be likely to yield, information important in prehistory or history.

Historic properties can be affected by actions that alter in any way the attributes that qualify the resources for inclusion in the National Register. Adverse effects can result when the integrity of a resource's significant characteristics is diminished. Consideration will be given both to the effects anticipated at the same time and place of the undertaking and to those potentially occurring indirectly at a later time and distance from the resource.

## **Alternative A – Proposed Action**

### **Direct/Indirect Impacts**

Prior any ground disturbing activities and/or with each phase of the project, an intensive (Class III) cultural resource inventory would be conducted to identify and evaluate cultural resources. A determination of eligibility and finding of effect would be made for each identified historic property by the agency and in consultation with the SHPO in accordance with Section 106 of the NHPA.

Archaeological sites determined to be eligible for the National Register of Historic Places (NRHP) would be flagged and avoided thus having No Effect. However, if it is found that conducting the vegetation treatment on site would have no impact on the integrity or the characteristics that make the site eligible for the NRHP, the treatment will be conducted on site resulting in No Adverse Effect as a result of the proposed action.

### **4.2.1.4 Fish and Wildlife Excluding USFW Designated Species**

Completion of the proposed action would result in a more natural fire regime and reduced risk of high intensity wildland fire in the crucial deer winter range. The decrease in pinyon-juniper canopy cover would provide an opportunity for the understory of sagebrush, grasses and forbs to increase. As a result, it is expected that the habitat quality and sustainability for wintering deer and elk herds and other sagebrush dependent species would increase.

The treatment activities are proposed to occur within the seasonal closure for crucial deer wintering habitat. In the short term, activities during winter months may have negative impacts to mule deer and elk. Much of the project area offers crucial and high value winter habitats for mule deer and elk and is utilized seasonally by local deer and elk herds. Winter range is important, as it offers required high value forage, thermal cover, and also sustains pregnant does during the winter months. These animals are subject to physical stress from cold weather and low forage availability during winter months, and disturbance during this time may cause short-term physical stress and abandonment of crucial habitat which may lead to the use of adjacent habitat insufficient for supporting these herds. Reduced physical condition, loss of unborn young and mortality may result from additional stress and utilization of habitat unsuitable to provide needed winter requirements. Reducing the number and diversifying the age classes of pinyon-juniper would not adversely affect wintering big game in the long term because sufficient islands of trees would be retained for escape and thermal cover. Additionally, the removal of pinyon and junipers encroaching into sagebrush parks secures the future long-term availability and quality of winter range forage for mule deer.



The seasonal closure for crucial deer wintering habitat (December 1 to April 15) would be imposed by the authorized officer if there was undue stress to the local deer and elk populations. The BLM would coordinate as necessary with the Utah Division of Wildlife Resources (UDWR). Upon review and monitoring, the authorized officer could close all or part of the project areas due to climatic and/or range conditions. An example would be if the snow depths were greater than 24 inches for more than two weeks or if there was extreme cold (ten below zero Fahrenheit) for more than two weeks. Also, areas within the project boundary could be restricted to limited activities or time periods, if large numbers of wintering big game accumulated in those areas and would be stressed by project activities.

A successful treatment would return a large portion of the treated area to a habitat favoring early successional wildlife species and create a diversity of stand conditions. Because plant communities are inhabited by wildlife species that are most adapted to them, as plant communities change the wildlife communities also change. Wildlife species such as sage grouse, quail, wild turkeys, grassland songbirds and migrant songbirds require early successional habitats to supply all or most of their needs. If early succession habitats are not available, these animals survive with a lessened capacity or quality of life. Vegetation treatments that expose more groundcover to sunlight set the process in motion for early succession plants to flourish. The benefits to native plant communities from the proposed project and a concurrent return to a more historic fire regime and condition class would likely promote an increase in numbers of wildlife that favor grassland/sagebrush habitat.

Wildlife species that have adapted to the disturbed habitat condition (i.e. dense pinyon-juniper) may decline. Because pinyon-juniper has moved into sites throughout the proposed project area with deeper soils historically supporting sagebrush species, the reduction of the trees would encourage the return of the ecosystem to that of a grassland/shrubland community. Reduction of pinyon-juniper habitat would have a long-term adverse effect on species such as grey vireo, pinyon jay, Bewick's wren and juniper titmouse, species that utilize the dense pinyon-juniper in the proposed project area for habitat. There are sufficient woodlands surrounding the project area to absorb displaced species.

Long-term beneficial impacts to wildlife, migratory birds, and raptor habitats from the proposed project include the reduction of high-severity wildland fire potential, a potential increase in vegetative diversity, increased edge effect along with mosaic landscapes, and an attempt to control the invasion of noxious weeds and cheatgrass.

#### **4.2.1.5 Fuels/Fire Management**

According to accumulated research results, the most effective strategy in fuel management is thinning of vegetation followed by prescribed fire, piling and burning, and/or mechanical treatment. These activities reduce canopy, ladder and surface fuels and can reduce both the intensity and severity of wildland fire (RMRS-GTR-120, page 27). The proposed action would result in the reduction of regenerative pinyon-juniper and the eventual elimination of chaining debris as well as slash debris from cutting and dispersal of live trees and brush. A successful project would reduce the potential for high-intensity wildland fire while restoring natural ecological processes. A subsequent increase in vegetative diversity and woodland productivity would be expected, with greater availability of soil moisture and lower evaporation rates over the long term from a gradual increase in vegetative understory species. The production of understory



grasses and forbs is known to decline as crown cover increases in pinyon-juniper woodlands (Arnold et al., 1964). In reducing the overstory, research shows that at least two-thirds of the crown cover must be removed to achieve a substantial increase in the growth of understory vegetation (Fowler and Witte, 1987). Vegetation that has proven to quickly respond to this type of reduction in pinyon-juniper includes various grasses that flourish from reduced competition from overstory junipers. Research results show additional benefits of increased herbaceous biomass from livestock rest following treatment.

## **Fuels/Fire Management Collective Treatment Area**

### **Manual Treatment**

While scattered fuels retain the surface fuel load necessary for future prescribed fire maintenance, the immediate fire threat is reduced because potential flame height and rate of spread are both inhibited by the dispersion of fuels. Piling of hand-cut slash for future follow-up burning similarly reduces the immediate fire threat through redistribution of the fuel load.

### **Mechanical Treatment**

Mechanical mastication treatments do little to affect surface fuels with the exception of compacting and crushing vegetation, and may have the potential to increase surface fire spread and fireline intensity due to fine-wood surface loading from the mulch (Raymond and Peterson, 2005). Spread and intensity can present fire-control issues in the event of a wildland fire following treatment, and high temperature surface fires have the potential to damage soils and new vegetation. The potential to increase surface fire is decreased when mechanical treatment is followed by prescribed fire to remove the resulting fine fuels. However, even if a wildland fire occurs in a mechanically-thinned area, research shows that the fire would be easier to control than a crown fire in an untreated area (Resh et al., 2007). Consequently, overall impacts from a wildland fire following mechanical treatment may be lower in spite of higher surface fuels because less acreage would be expected to burn than in a crown fire situation.

The reduction of closed-canopy pinyon-juniper from this project would decrease the potential for a crown fire, causing fire to move from the tree canopy to the ground through reduction of a continuous canopy. Fire would then spread through perennial grasses, forbs and shrubs, burning at a lower intensity and resulting in safer and more efficient fire control.

A recent study shows that understory cover in mastication treatments was 15 times greater following two growing seasons, compared to untreated controls (Ross, Castle and Barger, 2012).

### **Prescribed Fire Treatment**

The benefits of altering fuel structure and wildfire behavior through prescribed fire have been observed and reported for many years (Weaver 1955, 1957, Cooper 1960, Biswell and others 1973, Fernandes and Botelho, 2003; RMRS-GTR-120, page 24). Because prescribed fire is not utilized to precisely modify stand structure and composition as in mechanical thinning, there is generally less predictability of post-treatment stand structure. However, prescribed fire does influence multiple fuelbed characteristics including the reduction of fine fuels, large woody fuels and other live surface fuels, which can decrease both the spread rate and intensity of wildland fire by changing the continuity of fuels. Decreasing the horizontal fuel continuity can also limit fires to lower intensities and reduce spot fire ignitions. A prescribed fire of low to moderate



severity would be expected to benefit most plant communities in the general vegetative communities found in the proposed project area by facilitating the recovery of desired species.

There are inherent risks associated with the use of prescribed fire including the possibility of promoting the spread of invasive annuals. The monitoring segment of the proposed action would instigate follow-up action if monitoring plots showed a high invasive component. Risks of prescribed fire could also involve fire escaping the established perimeter of the burn and related economic and resource damage. However, compared to the large number of prescribed fires successfully completed over the years by BLM crews in the Canyon Country Fire Zone and other state and federal agencies, escaped fires are rare.

### **Herbicide/Biological Treatment**

Accidental spill, drift or browse from treatments could have a potential negative effect on non-target vegetation in the short term, although SOPs are in place to prevent non-target impacts to adjacent vegetation. The long-term beneficial effects of reducing non-native invasive species, understory shrub components and their hazardous fuel component would outweigh the short-term negative effects.

#### **4.2.1.6 Invasive Species/Noxious Weeds**

Disturbance caused by the proposed treatment could allow the introduction, establishment or spread of invasive species and noxious weeds. Specific negative effects of invasive plants and noxious weeds associated with proposed action in the project area could include 1) reduction in the overall visual character of the area; 2) competition with, or elimination of native plants; 3) reduction or fragmentation of wildlife habitats; and 4) increased soil erosion. Design and implementation of treatment activities would allow for monitoring, maintenance, and adjustment of treatments. By implementing Best Management Practices (BMPs) and pre-washing equipment and vehicles, the introduction of invasive species/noxious weeds could be reduced. Any increase/spread of existing invasive species/noxious weeds or inadvertent introduction of invasive species/noxious weeds detected by monitoring results would generate an IPM maintenance action to mitigate impacts.

When applying herbicides for this project, the Standard Operating Procedures, Prevention Measures and Mitigation Measures from the BLM Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on BLM lands in 17 Western States and Record of Decision will be followed. Chemical applications would be similar to those already analyzed in DOI-BLM-UT-G020-2010-020-EA and DOI-BLM-UT-GOSX-2012-0057-EA.

Imazapic is an Acetolactate Synthase (ALS) inhibiting herbicide, which means imazapic, blocks the synthesis of amino acids that are required for protein production and cell growth, thereby resulting in plant death. In chapter 4 of the BLM Programmatic Environmental Impact Statement (PEIS) for *Vegetation Treatments on BLM lands in 17 Western States, 2007*, page 4-105 states that “Risk quotients for terrestrial wildlife were all below the most conservative LOC of 0.1, indicating that direct spray of imazapic is not likely to pose a risk to terrestrial animals. Therefore, use of imazapic would primarily affect wildlife through habitat modification. Its use in forested rangeland and other wildlife habitat areas could benefit wildlife by controlling invasive plant species and promoting the establishment and growth of native plant species that



provide more suitable wildlife habitat and forage” (BLM PEIS, 2007). “Imazapic would not be used for treatment of aquatic vegetation, but could be used in riparian areas where the application could be monitored to ensure that the herbicide would not come in direct contact with water” (BLM PEIS, 2007). For aerial applications of imazapic within the project area, the appropriate herbicide-free buffer zone for herbicides not labeled for aquatic use based on risk assessment guidance is a minimum width of 100 feet (BLM PEIS, 2007).

Adjuvants generally function to enhance the toxicity of or prolong the activity of an active ingredient or to make the active ingredient easier to handle. For terrestrial herbicides, adjuvants aid in proper wetting of foliage and absorption of the active ingredient into plant tissue. Adjuvants include surfactants, selected oils, anti-foaming agents, buffering compounds, drift control agents, compatibility agents, stickers, spreaders and colorants. In chapter 4 of the BLM PEIS, page 4-89 states “In general, adjuvants compose a relatively small portion of the volume of herbicide applied. However, selection of adjuvants with limited toxicity and low volumes is recommended for applications near aquatic habitats to reduce the potential for the adjuvants to influence the toxicity of the herbicide.” (BLM PEIS, 2007). Only adjuvants that are listed on the BLM approved adjuvant list would be used within the project area. Adjuvants would be used according to label and with the appropriate herbicide. According the BLM PEIS, 2007, BLM would suspend the use of R-11®, which is a nonylphenol ethoxylate, in its herbicide applications. BLM would avoid using glyphosate formulations containing polyoxyethyleneamine (POEA), or seek to use formulations with the least amount of POEA, to reduce risks to amphibians and other aquatic organisms.

#### **4.2.1.7 Livestock Grazing**

In the long term through completion of the proposed treatments, the risk of severe wildland fire would be reduced and the native vegetation communities would be more sustainable. In addition, seeding would occur in areas of poor understory vegetation, thus creating an increase in available quality and quantity of forage for livestock.

Livestock grazing could be impacted by the need to rest the areas selected for seeding for at least two growing seasons. The closure of the allotments or portions of allotments could be detrimental to livestock operations that are dependent upon federal grazing allotments for livestock forage. Because livestock currently make minimal use of the dense pinyon and juniper woodland areas due to the scarcity of forage species present as well as limited water sources, restriction from the specific area of the proposed treatment would be expected to have minimal short-term impacts to livestock grazing activities. However, in the long term it is expected that vegetation would establish and thrive in the treated areas and that foraging would then resume. Beneficial long-term effects from the treatment would be expected as livestock would have a more reliable forage base and improved vegetative diversity within the affected allotments.

Because of the ability to use or create use areas or pastures within affected allotments, impacts to livestock operations from the requirement to rest seeded areas would be expected to be minimal. The proposal includes re-seeding with an appropriate seed mix that would likely promote successional changes toward the desired vegetative community. Fences may be installed in



strategic locations to exclude livestock from seeded areas. These fences could be removed upon successful establishment of the desired plant community or the fences may stay in place to aid in future livestock management. Beneficial long-term effects from the treatment would be expected as livestock would have a more reliable forage base and improved vegetative diversity within the allotments. The reduction of encroaching pinyon-juniper would stimulate the regeneration of sagebrush and grasslands, enrich understory vegetation, and improve habitat. Following treatment and revegetation of the treated area, livestock could be drawn into areas seldom grazed, shifting use patterns and forage consumption. Decreasing fuel loads in the area would also have a positive impact on ecosystem and rangeland health by increasing perennial grasses and shrubs and diversifying the age class of trees within the project area.

Reducing the fuel load and continuity of heavy fuels would also decrease the potential for high-intensity fire in closed-canopy pinyon-juniper, which would benefit livestock. A severe wildland fire event could negatively affect livestock grazing throughout the allotment by reducing the amount of forage. Grazing restrictions could also be imposed due to potential Emergency Stabilization and Rehabilitation (ESR) activities.

#### **4.2.1.8 Soils**

Ground disturbance associated with mechanical treatment may cause short term increases in runoff resulting from vegetation removal. Soil compaction and ruts from mechanical treatment may also affect runoff in the short term, although compaction impacts would be reduced by the deposition of mulch and shredded materials. Denuded soils would contribute to increased dust particulates in the air. This would be reduced as vegetation recovers. Masticated mulch and surface litter from treatment activities would also trap sediment and allow for greater water infiltration, which would decrease short term wind erosion and improve plant growth by providing a protective layer for seed germination. If successful, the proposed treatment would establish beneficial plant species composition as well as rooting depth, which would increase both soil fertility and resistance to compaction. In the long term, enhanced soil coverage from perennial grasses and shrubs would increase infiltration and reduce runoff. Improved soils would support the hydrologic function and contribute to watershed health.

Regardless of the method utilized to remove vegetation, treatments could result in short term negative effects. Potential effects could include increased rates of erosion and reduced water infiltration, which could lead to soil loss and reduced soil productivity. All vegetation removal activities have the potential to increase surface water runoff as a result of vegetation removal, which could lead to sedimentation in wetlands. However, under normal precipitation patterns, it is most likely that excess moisture would be utilized by the remaining vegetation.

The use of ATVs for seed dispersal could create some short term impacts to soils. Harrowing could have the highest short term impacts resulting from the loss or disturbance of soils crusts and soils structure, which may cause lo soil aggregate stability and increased potential for short term (1 to 2 years) wind and water erosion. Because vegetation would be expected to increase in both diversity and quantity, over several growing seasons following completion of the project, the negative impact to soils crusts would be offset by increased vegetation and soils stabilization. Depending on climatic conditions and other potential disturbances in the area, vegetation regrowth could begin to stabilize soils as soon as the first growing season following treatment.



In the long term, the proposed project would move the area toward a more desirable fire condition that could decrease the size, severity and duration of wildland fire. Less severe wildland fire would result in fewer impacts to soil characteristics such as temperature and physical structure. Re-vegetation activities would improve soil resources in the long term and reduce the potential for erosion by fostering a healthy, resilient understory. A decrease in potential impacts to soils crust from severe fire would result in increased fixation of atmospheric nitrate and a reduction in soil erosion.

Following a successful treatment, fire regimes would be expected to return to a more natural pattern with fewer indirect soil impacts common to high intensity fire such as increased stream sediment loading, and fugitive dust from wind erosion.

#### **4.2.1.9 Water Resources/Quality**

The reduction of vegetation would have a temporary effect on surface runoff by increasing the potential for frequency and magnitude of response to storm events. Effects would depend on the slope gradient and physical characteristics such as rocks and boulders on the slope. Overall, the effects would be minor and short term unless an unusually extreme precipitation event occurred immediately following treatment.

Mechanical treatments could interrupt some gullies and rills in the project area. However, observance of standard operating procedures would reduce the effects of these disturbances to a minimum. Groundwater recharge could be affected by increased runoff and resultant increases in rapid storm response through macropores in the shallow substrate. This would cause increased flows in the drainages and resultant increase in rill and gully size. The effect would be temporary and limited to the recovery period. After which a new dynamic would be reached in equilibrium. In the long term, hydrologic conditions would improve by shortened slope length in runoff due to new plant growth.

The long term beneficial effects of the proposed treatment include the restoration and preservation of the natural resource values of the drainages and flow patterns through the creation of a resilient and diverse vegetative community.

#### **4.2.1.10 Woodland/Forestry**

The proposed action would result in the reduction of pinyon/juniper and the eventual elimination of slash debris from cutting and dispersal of live trees and brush. Continuing to allowing permits to be distributed for fuel and other wood harvesting in the thinned and piled areas as proposed in the project description, could advance the removal of slash debris within the treatment area.

A successful project would restore natural ecological processes with a subsequent increase in vegetative diversity and productivity, and a greater availability of soil moisture and lower evaporation rate over the long term from increased vegetative cover. The treatment would set back the seral stage of the pinyon/juniper woodlands and increase the health of the woodlands by re-establishing the natural variability, stability and diversity of the vegetative community.

#### **4.2.1.11 Vegetation Excluding USFW Designated Species**

The proposed treatment within the Semidesert stony loam (Utah juniper-pinyon) ESD is expected to result in a conversion of the tree community to an early seral stage vegetation



community. Large areas of trees would be removed and grass, forb and shrub establishment would be encouraged. Treatment within the Semidesert sandy loam (fourwing saltbush) ESD is expected to assist in maintaining the healthy shrub and grass component into the future. The anticipated plant community after treatment would provide a higher cover, variability, and density of vegetation.

An initial decrease in vegetation cover would occur immediately following mechanical treatment, although mulch and debris from the treatment would have a stabilizing effect on denuded soils to prevent erosion. Emergence and development of desired species and/or seeded species may not occur during the first year, but monitoring results from adjacent treatments show that removal of grazing from seeded units during the first two growing seasons would contribute to the achievement of treatment goals and objectives. Treated areas that have been seeded would be restricted from livestock grazing for a minimum of two growing seasons. Temporary fencing and temporary water developments would restrict livestock grazing from the seeded area and allow livestock grazing to occur in unseeded areas of an allotment or treatment area. Temporarily developing existing water projects located within treated areas with above ground waterlines and temporary water troughs may increase the grazing use around the temporarily installed watering locations. However, grazing use around the developed water source would temporarily decrease. A successful project would restore natural ecological processes with a subsequent increase in vegetative diversity and productivity, and a greater availability of soil moisture and lower evaporation rate over the long term from increased vegetative cover. Ross (2012) found that in two growing seasons after treatment in the mastication sites understory cover was 64%; values that clearly exceed the restoration target (55%) for plant cover increases after treatment.

#### **4.2.1.12 Non-WSA Lands with Wilderness Characteristics**

Potential impacts of the proposed treatment project would result in direct and indirect impacts to the wilderness characteristics including: loss of size, loss of naturalness, loss of outstanding opportunities for solitude, and loss of outstanding opportunities for primitive and unconfined recreation in the short term.

##### **Direct**

The proposed treatments would selectively remove the existing vegetative structure and cover through mechanical and/or hand cutting efforts and scatter the slash on the surface on approximately 17,077 acres of non-WSA lands with wilderness characteristics over a 10-15 year time frame. Thus, impacts from mechanized equipment could occur on up to 17,077 acres of lands with wilderness characteristics. As discussed in the above sections for Soils, Vegetation, Invasive Weeds and Fuels/Fire Management, these treatments would create temporary impacts to these resources.

The results of the proposed treatments on soils, vegetation, invasive weeds and fuels and fire resources could impact an area's natural appearance, the nature and extent of the landscape, the presence/or lack of native vegetation communities, the connectivity of wildlife habitats, or other actions that could result from surface disturbing activities. All these activities affect the presence or absence of human activity and, therefore, could affect an area's natural appearance, the outstanding opportunities for solitude and primitive, unconfined types of recreation. Visitors may have a temporary loss of outstanding opportunities for solitude or for primitive and unconfined



recreation during project activities, but this would be short term episodes in isolated areas less than 2000 acres at a time over the next 10-15 years when treatments were occurring. There are still vast expansions of areas that would remain undisturbed and offer solitude or opportunities for primitive and unconfined recreation in adjacent areas.

#### Indirect

Habitat enhancement by any methods in the short term would introduce an unnatural element to the landscape, degrading the natural condition of the lands with wilderness characteristics. However, these methods would last as long as necessary for restoration of the habitat. A variety of actions would be implemented to restore, maintain, and enhance native wildlife populations. Improved wildlife populations, native vegetation communities and reduced weed invasions would enhance the natural character of the land in the long term within the 17,077 acres of lands with wilderness characteristics. Further, larger and healthier wildlife populations would expand opportunities for primitive and unconfined recreation opportunities, including wildlife viewing, hunting, and natural history study.

#### 4.2.1.13 Monitoring and/or Compliance

Transects and/or photo plots to document fuel load and vegetation composition would be assembled within the treatment area prior to project implementation. Monitoring results would be documented prior to treatment and for a period following completion of the project. A successful reduction in fuel load and reduced flammability of the treatment area, in addition to improved habitat and forage, would indicate desired goals had been reached.



**Plot Set-up Prior to Treatment**

BLM monitoring projects are ongoing from Canyon Country Fire Zone treatments in similar vegetative communities in the Moab, Monticello and Price field offices, and treatment results are utilized in both design and methodology for newly proposed projects. Because restoration is a relatively new science, treatments may deviate from the predicted or desired outcome even in a carefully planned and implemented treatment.

Treatment monitoring is therefore essential to improve future project planning as well as to contribute to the growing database of monitoring results. Partnership between agencies is a critical step in adaptive management of forests and woodlands in southeastern Utah. The Canyon Country Fire Zone has taken the lead in an effort to combine datasets such as past fire occurrence and fuels treatments with newer treatment data from cooperating agencies in southeastern Utah to create a comprehensive look at collective activities on a landscape scale.



Joint research studies have taken place in several other project areas within the Moab and Monticello Field offices. The BLM and the University of Colorado (CU) are collaborating on research studies to evaluate different types of fuels management treatments (mechanical, manual and prescribed fire) to measure potential effects on soils, water quality and vegetative recovery.

Research collaboration supports the BLM's ongoing efforts to better understand the ecological processes occurring in Douglas-Fir and mixed conifer woodlands and assists in the design of future treatments in this type of ecosystem. Research and monitoring results from the Cedar Mountain Fuels Reduction and Vegetative Restoration project would be incorporated into management decisions regarding future resource treatments in this area as well as in other areas of the Canyon Country Fire Zone. Further treatment in this project area could include maintenance burning, additional seeding, reintroduction and/or adjustment of grazing seasons or numbers, additional fuels treatments, and/or other actions. Management decisions requiring treatment methods not previously analyzed could initiate further NEPA analysis.

Presence absence surveys will be completed for TAVA during the bloom time starting in 2014 and continuing annually until project is completed.

#### **4.2.2. Alternative B – No Action**

##### **4.2.2.1 Air Quality**

No management action involving fuels and fire management would occur and there would be no associated impact to the current status of air quality and greenhouse gas emissions in the project area.

##### **4.2.2.2 BLM Sensitive Plant Species**

No management action involving fuels and fire management would occur and there would be no associated impact to BLM sensitive species in the project area.

##### **4.2.2.3 Cultural Resources**

The No Action alternative would not contribute to the direct impacts on identified archaeological resources, because no physical disturbance would occur, thus resulting in No Effect to historic properties. However, over time, the No Action alternative could contribute to indirect or cumulative impacts on identified archaeological resources, due to increased erosion, exposure, etc., from lack of vegetation or should a fire occur.

No Mitigation measures have been identified other than those incorporated as part of the Proposed Action and No Action alternatives. Because the Proposed Action and No Action alternatives will result in No Effect or No Adverse Effect to historic properties, additional mitigation of adverse effects is not required.

##### **4.2.2.4 Fish and Wildlife Excluding USFW Designated Species**

Pinyon-juniper growth within the project area has created a potentially hazardous fire situation while contributing to a decrease in vegetative diversity and ecological function. High severity wildland fire in this particular area could create unstable slopes, increase erosion and/or sedimentation, char soils and vegetation, damage riparian areas along the creeks, alter wildlife habitat, and decrease the quality of crucial deer winter range.



With no reduction of fuels in the proposed project area, the eventual occurrence of a high intensity and potentially stand-replacing wildland fire could have direct adverse impacts to wildlife. A wind-driven, canopy fire event would typically alter the animal community and habitat more dramatically than an understory fire, as animal species are adapted to survive fire patterns of high fire frequency and low severity. The impact to wildlife from a high-severity fire in the proposed project area would depend on the tree density and the amount of grass in a given area.

Stand-replacing fires and severe, high-intensity wildland fires can trigger high rates of mammal emigration because of their dependence on vegetation for forage, cover and thermal protection. Small mammal species are also adversely affected when their habitat burns due to decreased protection from predators and competition for decreased food sources.

Invasion by non-native plant species, into particular ecosystems, can increase fuel load and continuity which results in increased fire frequency. More fires result in the spread of invasive annuals, which disrupts the balance of shrubs/forbs and native grasses and threatens the native habitats of sagebrush obligate bird species, mule deer, and elk.

#### **4.2.2.5 Fuels/Fire Management**

With no treatment, the risk of an intensive stand-destroying fire would be high. Stand-destroying fires effectively eliminate existing forage and wildlife cover. A decline in vegetative diversity would continue into the future if pinyon/juniper regeneration were allowed to continue unabated. If no action were taken to reduce the hazardous fuels threat continued fuel loading would pose a greater wildfire hazard than currently exists. A combination of high temperatures, low relative humidity, winds, and/or continued drought conditions could create the potential for a catastrophic and hazardous fire, jeopardizing the health and safety of property owners and firefighters and posing a threat to public property.

#### **4.2.2.6 Invasive Species/Noxious Weeds**

Potential for the spread of invasive, non-native plant species would be low since no surface disturbance would occur. If a stand-replacing fire were to occur, a fire would likely cause an increase of invasive plants. Wildland fire could increase the spread of cheatgrass and other invasive plant species which would, in turn, lead to a potential increase in fire frequency.

#### **4.2.2.7 Livestock Grazing**

There would be no potential benefits to the allotment that may have been realized from the fuels reduction and corresponding improvement in vegetative diversity and vigor. Soil productivity would decrease substantially as a result of a hot fire, due to the loss of both the duff/litter layer as well as any organic matter (nutrients) present in the upper soil layers.

If a wildland fire occurred, livestock would be restricted from the burned area until emergency fire stabilization and rehabilitation (ESR) objectives could be met. Although restrictions would also be imposed under the proposed action, it is likely that a high severity wildland fire would have a greater impact to livestock grazing because significant damage could occur to the allotment in a stand-replacing fire. Potential impacts from a high intensity wildland fire could include indeterminate allotment closure.



#### **4.2.2.8 Soils**

The no action alternative has the highest potential to indirect impacts due to an increased risk of large scale high intensity wildfire, in the absence of a fuels reduction treatment, the existing densities of pinyon-juniper and woody debris that have accumulated over the years would increase, along with the projected likelihood of a severe wildfire. Although fire suppression activities would continue as in the past, a fast moving wildland fire could out-pace suppression efforts and the fire could potentially affect a large area. Research has shown that woodland encroachment into sagebrush steppe type systems increases surface runoff and erosion. Runoff and erosion rates are highest in the interspatial zones between canopies and can negatively affect wildlife habitat and decrease soil productivity.

#### **4.2.2.9 Water Resources/Quality**

By not implementing the proposed project, there would be an increased loading of fuels in the project area and an increased potential of a high intensity wildfire due to that increased fuel load. Should a wildfire occur, overall watershed stability could be compromised if existing conditions were not modified. A typical wildfire would be expected to burn off above ground vegetation. A temporary increase in erosion would be expected until vegetation recovers. Further, with the reduction of vegetation, there would be an increase in overland flows because the vegetation that slows the surface runoff would be compromised. This increased runoff coupled with the eroded soils material would have enough volume to carry the soil out of the area and into the streams. This effect would be short term, typically 3 to 5 years.

#### **4.2.2.10 Woodland/Forestry**

The pinyon/juniper woodland would remain intact under the no action alternative. No reduction of the mature pinyon/juniper would be realized and eventually the age and size of pinyon/junipers would be relatively constant. Fuel wood harvesting and Christmas tree collection would continue in the area. These activities would reduce pinion and juniper but at a slower rate which would allow stand densities to increase. A wildland fire occurring in a dense, closed canopy, overly-mature woodland could burn severely enough to denude all existing vegetation.

#### **4.2.2.11 Vegetation Excluding USFW Designated Species**

A decline in vegetative diversity would continue into the future if pinyon-juniper regeneration were allowed to continue unabated. Under the no-action, alternative competition from woody species in combination with dense, closed-canopy pinyon-juniper woodland would continue to oppress the herbaceous understory. Grasses and forbs would be less available to livestock for forage, and pinyon-juniper would continue to move into areas historically dominated by grasses and shrubs. Indirect impacts could be severe under the no-action alternative because of the potential for a high-intensity wildland fire.

High severity wildland fire in this particular area could also create unstable slopes, increase erosion and/or sedimentation, char soils and vegetation, alter the vegetative community, and as a result reduce the suitability of the area for livestock grazing. After high severity wildland fires, the vegetative community in this area is often dominated by cheatgrass. Cheatgrass spread alters composition and ecosystem function, limiting the nutrition of forage and season of use with an overall reduction in the quality of livestock grazing. The probability would be high for a



decrease in plant diversity, invasion of noxious weeds, and wind and water erosion due to compromised soil health and productivity, which could lead to a decline in rangeland health. No temporary fencing or water locations would be developed or used.

#### **4.2.2.12 Non-WSA Lands with Wilderness Characteristics**

##### **Direct/Indirect Impacts**

The No Action alternative would not contribute to the direct impacts on wilderness characteristics, because no physical disturbance would occur, thus resulting in No Effect to wilderness characteristics. However, over time, the No Action alternative could contribute to indirect or cumulative impacts on wilderness characteristics should a fire occur.

##### **Mitigation Measures**

No Mitigation measures have been identified. Because the Proposed Action and No Action alternatives will result in No Effect or No Adverse Effect to wilderness characteristics, additional mitigation of adverse effects is not required.

### **4.3 Cumulative Impacts Analysis**

“Cumulative impacts” are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

#### **4.3.1 Air Quality**

##### **4.3.1.1 Cumulative Impact Area (CIA)**

The CIA for air quality would be the air shed associated with Emery and Carbon Counties and the Price Field Office.

##### **4.3.1.2 Past and Present Actions**

Past and present actions within the CIA include recreational activities; livestock grazing; wildlife movement; management activities on private, city, county, state and other federally managed lands; coal mining; coal fired power plants; highway traffic; home burning of heating fuels. The List here is not exhaustive and could include all activities effecting the human environment.

##### **4.3.1.3 Reasonably Foreseeable Action Scenario (RFAS)**

All activities effecting air quality in the CIA are expected to continue in the reasonably foreseeable future.

##### **4.3.1.4 Cumulative Impact Analysis**

The proposed project, combined with the activities in the CIA, would create no measurable effect in the long term.

#### **4.3.2 BLM Sensitive Plant Species**

##### **4.3.2.1 Cumulative Impact Area (CIA)**



The CIA for Cedar Mountain Flame Flower is Cedar Mountain because it is only known to occur on Cedar Mountain.

#### **4.3.2.2 Past and Present Actions**

In the CIAA, past and present activities include grazing, Off Highway Vehicle (OHV) use, fuel reduction projects and power lines.

#### **4.3.2.3 Reasonably Foreseeable Action Scenario (RFAS)**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.

#### **4.3.2.4 Cumulative Impact Analysis**

Cumulative impacts include surface disturbing activities resulting in habitat degradation for the Thompson's talinum. Surface disturbance from new roads; surface disturbance (loss of vegetation) and increased traffic and human activity as a result of recreational activities and other land uses in the CIAA could contribute to habitat degradation.

OHV use will continue on the existing roads and trails. The Price RMP limits OHV use to designated routes. OHV use off designated routes has been minimal in the Cedar Mountain area and it is expected to be minimal in the future because of the terrain and the location of the scenic vistas. Most OHV users ride in the allotments to view the scenic vistas of the San Rafael Swell as seen from the edge of Cedar Mountain. Fuel reduction projects could remove the Utah juniper and pinyon trees and facilitate the growth of herbaceous vegetation. Thus erosion could be reduced.

The incremental impacts of all activities are nearly impossible to quantify. However, livestock use is minimal in the open bare areas of preferred habitat. OHV use is expected to be a minor contributor to cumulative impacts. The proposed action would contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Livestock use would remain at current levels, and there would be no new structural developments. The number of road miles within the area would not increase as a result of implementing the proposed action.

### **4.3.3 Cultural Resources**

#### **4.3.3.1 Cumulative Impact Area (CIA)**

The Cumulative Impact Area (CIA) is the project area, which is approximately 59,489 acres of public land administered by the BLM's Price Field Office, Canyon Country Fire Zone.

#### **4.3.3.2 Past and Present Actions**

Past and present actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting.

#### **4.3.3.3 Reasonably Foreseeable Action Scenario (RFAS)**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.



#### **4.3.3.4 Cumulative Impact Analysis**

Archaeological sites identified and determined to be eligible for the National Register of Historic Places have traditionally been avoided when conducting vegetation treatments. However, consistently avoiding eligible sites can result in creating islands of untreated vegetation. Archaeological “leave islands” increases visibility and can result in the vandalism or looting of eligible sites. This is why each eligible site identified will be evaluated for the potential to treat the site without affecting what makes the site eligible.

#### **4.3.4 Fish and Wildlife Excluding USFW Designated Species**

##### **4.3.4.1 Cumulative Impact Area (CIA)**

The Cumulative Impact Area (CIA) is the project area, which is approximately 59,489 acres of public land administered by the BLM’s Price Field Office, Canyon Country Fire Zone.

##### **4.3.4.2 Past and Present Actions**

Past and present actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting.

##### **4.3.4.3 Reasonably Foreseeable Action Scenario (RFAS)**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.

##### **4.3.4.4 Cumulative Impact Analysis**

Implementation of the proposed action would improve the overall health of mule deer wintering habitat within the project area. Thinning or reducing the amount of trees within the project area would reduce competition and allow for more favorable species of vegetation (i.e. forbs and shrubs) for mule deer and other wildlife species to utilize. In addition small piles of wood debris that may be left behind after the completion of the project will create favorable habitat for small mammals. This in turn may increase the prey base for resident raptors that may be nesting or occupying the area.

Implementation of the proposed action would reduce the amount of available cover for larger wildlife species (i.e mule deer, and elk). Wildlife often rely on these areas to seek shelter and avoid predation. Draws and drainages have been left out of the project to ensure that cover still remains in these active areas for wildlife.

#### **4.3.5 Fuels/Fire Management**

##### **4.3.5.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is the project area, which is approximately 59,489 acres of public land administered by the BLM’s Price Field Office, Canyon Country Fire Zone.



#### **4.3.5.2 Past and Present Actions**

Fire history data shows that 29 fires were detected and extinguished within and around the CIA. Past fire suppression strategies have allowed PJ expansion to continue unimpeded by keeping fire size smaller than would have naturally occurred. Present actions within the CIA are the proposed Cedar Mountain project as discussed in this EA.

#### **4.3.5.3 Reasonable Foreseeable Action Scenario**

It is reasonably foreseeable that fire starts will continue within this area. Pinyon juniper expansion will continue if unimpeded, elevating chances of the area experiencing a high severity wildfire. No additional fire/fuels actions are planned within the CIA area other than the proposal covered in this EA.

#### **4.3.5.4 Cumulative Impact Analysis**

Cumulative Impacts that can be expected from the proposed action would include increased ground cover (i.e. grass, forbs etc.), decreased erosion, and a lower fire potential. Current fuels within the project are classified as a FRCC 3. Post fuels treatments should convert most of the CIA area to a FRCC 2/1. This conversion should lower the risk of losing key ecosystem components and alter fire frequencies and size to more historic levels.

### **4.3.6 Invasive Species/Noxious Weeds**

#### **4.3.6.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is the project area, which is approximately 59,489 acres of public land administered by the BLM's Price Field Office, Canyon Country Fire Zone. Elevation ranges from 5417 to 7661 feet. The precipitation range within the CIA is approximately 10 to 14 inches annually.

#### **4.3.6.2 Past and Present Actions**

Past, present and reasonably foreseeable actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting.

Invasion and/or spread of invasive species/noxious weeds could affect vegetation within the proposed area. Past pinion and juniper reduction treatment projects have occurred within the project area and have not increased the spread of invasive species within the area. Successful regeneration of native and non-native plant species after project implementation could decrease the spread of invasive species. With the disturbance, associated with the proposed project, would come new opportunities for the spread of invasive plants and the introduction of noxious weeds. Monitoring of the project area would be ongoing following treatment and results could warrant further management action if invasive species/noxious weeds proliferate in this area. The continuing or increasing effects of these activities are impossible to quantify, but all may contribute to the issues brought forth in this EA.

#### **4.3.6.3 Reasonable Foreseeable Action Scenario**

Reasonable Foreseeable Actions are the same as addressed in section 4.3.6.2.



#### **4.3.6.4 Cumulative Impact Analysis**

Impacts of the Proposed Action combined with other recreational activities (i.e. hiking, horseback riding, OHV use), livestock grazing, wildlife movements, radio tower complex activities and associated traffic, activities on the adjacent back-country landing strip, fuel wood/Christmas tree harvesting and activities on adjacent private land would moderately contribute to cumulative impacts of invasive and noxious plants throughout the CIA. Invasive and noxious weeds within the Price Field Office boundaries typically occur along roadsides and ROWs. In the project area invasive species are limited to the roadways and trails. Specific negative effects of invasive plants and noxious weeds associated with the proposed action in the CIA could include: 1) reduction in the overall visual character of the area; 2) competition with, or elimination of native plants; 3) reduction or fragmentation of wildlife habitats; 4) increased soil erosion; and 5) reduction in recreational activities. Noxious weeds and invasive plant species would likely continue to expand their distribution within the CIA along roadways from surface disturbance and mechanical transport of weed seeds from outside the area as a result of ongoing and reasonably foreseeable recreational activities, livestock grazing, wildlife movements, radio tower complex activities and associated traffic, back-country landing strip, fuel wood/Christmas tree harvest and activities on adjacent private land. Plant communities within the CIA could be altered by invasive species/noxious weed encroachment, possibly changing the community's successional trajectory and composition, if invasive species/noxious weeds out-compete native plants.

#### **4.3.7 Livestock Grazing**

##### **4.3.7.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is the three grazing allotments (Cleveland Summer, Johnson Huff Hollow and Huff Bench) that have at least 90% of the allotment acreage within the project area.

##### **4.3.7.2 Past and Present Actions**

Past and present actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting.

##### **4.3.7.3 Reasonable Foreseeable Action Scenario**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.

##### **4.3.7.4 Cumulative Impact Analysis**

The proposed treatment is expected to result in a conversion of the tree community to an early seral stage vegetation community. The anticipated plant community after treatment would provide a higher cover, variability, and density of vegetation.

An initial decrease in vegetation cover would occur immediately following mechanical treatment, although mulch and debris from the treatment would have a stabilizing effect on



denuded soils to prevent erosion. A successful project combined with the activities in the CIA, would restore natural ecological processes with a subsequent increase in vegetative diversity and productivity within the treated areas of the project area. There would be a greater availability of soil moisture and lower evaporation rate over the long term from increased vegetative cover. The amount of forage available for livestock grazing could increase. However, the overall grazing use level within the CIA could decrease since the total amount of authorized livestock grazing use would not be increased due to more available forage.

#### **4.3.8 Soils**

##### **4.3.8.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is the project area

##### **4.3.8.2 Past and Present Actions**

Past and present actions occurring within the CIA would include all activities that are associated with physical land use including recreation, livestock grazing, wildlife movements, activities in the management of private lands.

##### **4.3.8.3 Reasonable Foreseeable Action Scenario**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.

##### **4.3.8.4 Cumulative Impact Analysis**

Impacts of the proposed action combined with other activities would minimally contribute to the CIA when combined with the past and present actions. After project completion, the soils resource would be improved due to a more diverse vegetative cover.

#### **4.3.9 Water Resources/Quality**

##### **4.3.9.1 Cumulative Impact Area**

The CIA is the project area. There are no perennial streams associated with the project area. All water resource impacts would be contained in the project area.

##### **4.3.9.2 Past and Present Actions**

Past and present actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting.

##### **4.3.9.3 Reasonable Foreseeable Action Scenario**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels



#### **4.3.9.4 Cumulative Impact Analysis**

Impacts of the proposed action combined with other activities would minimally contribute to the CIA when combined with the past and present actions.

#### **4.3.10 Woodland/Forestry**

##### **4.3.10.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is the project area, which is approximately 59,489 acres of public land administered by the BLM's Price Field Office, Canyon Country Fire Zone. Elevation ranges from 5417 to 7661 feet. The precipitation range within the CIA is approximately 10 to 14 inches annually.

##### **4.3.10.2 Past and Present Actions**

Past, present and reasonably foreseeable actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting. The continuing or increasing effects of these activities are impossible to quantify, but all may contribute to the issues brought forth in this EA.

##### **4.3.10.3 Reasonable Foreseeable Action Scenario**

Reasonable Foreseeable Actions are the same as addressed in section 4.3.10.2.

##### **4.3.10.4 Cumulative Impact Analysis**

The primary focus of the proposed action is to reduce the hazard of wildland fire in the Cedar Mountain area by thinning the dense stands of encroaching pinion and juniper. The reduction of fuels is considered to be the most efficient and effective way to reduce the public health and safety impacts of uncontrolled wildfires. After completion of the proposed project, wildfire moving into the project area would drop from the tree canopies to the ground and would spread by perennial grasses, forbs and shrubs rather than through the tree canopy.

Implementation of the proposed action would improve the overall health of the woodlands. Conditions in treated stands would be more representative of FRCC as a result of thinning to reduce stand density.

Implementation of the proposed action would result in the decrease in the amount of merchantable products available to the public.

#### **4.3.11 Vegetation Excluding USFW Designated Species**

##### **4.3.11.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is the project area, which is approximately 59,489 acres of public land administered by the BLM's Price Field Office, Canyon Country Fire Zone.

##### **4.3.11.2 Past and Present Actions**

Past and present actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel



wood/Christmas tree harvesting. Approximately 4400 acres of federal land within the CIA were treated in 1967. Treatments included pinyon/juniper removal by chaining and sagebrush removal by plowing. The treated acres were seeded with introduced grasses and native shrubs.

#### **4.3.11.3 Reasonable Foreseeable Action Scenario**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.

#### **4.3.11.4 Cumulative Impact Analysis**

The proposed project, combined with the activities in the CIA, would change the vegetation seral stage of newly treated areas from a late seral stage to an early seral stage. Previously treated areas would also change from a late seral stage to an early seral stage and established seedings would be enhanced with inter-seeding treatments.

### **4.3.12 Non-WSA Lands with Wilderness Characteristics**

#### **4.3.12.1 Cumulative Impact Area**

The Cumulative Impact Area (CIA) is Price River WIA and the Price River ext WIA with approximately 112,000 acres.

#### **4.3.12.2 Past and Present Actions**

Past and present actions occurring within the CIA include recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting.

#### **4.3.12.3 Reasonable Foreseeable Action Scenario**

Reasonable foreseeable actions within the CIA include the continuation recreational activities, livestock grazing, wildlife movements, activities on adjacent private land, radio tower complex activities and associated traffic, activities on an adjacent back-country landing strip and fuel wood/Christmas tree harvesting at current levels.

#### **4.3.12.4 Cumulative Impact Analysis**

Implementation of the proposed action, as well as all existing land uses in the project area, would not likely lead to the long term loss of Lands with Wilderness Characteristics in the CIA. The proposed treatment action would help to protect intact wildlife habitats and vegetative communities. Treatments would decrease cheatgrass infestations. These treatments would increase naturalness in these lands over the long term. The proposed treatment actions, in the long term, would restore, maintain, and enhance native wildlife populations and native vegetative communities, further maintaining and possibly expanding opportunities for primitive and unconfined recreation opportunities, including wildlife viewing, hunting, and natural history study.



## 5.0 CONSULTATION AND COORDINATION

### 5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. Appendix A provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below. Scoping, which is an early process for determining issues to be addressed, also helps to identify the issues that are not relevant or that have been reviewed in other environmental documents. Scoping for this project was initially accomplished by resource staff and fuels team members after collaboration with cooperating Federal and State agencies. Quarterly fuels meetings, attended by members of cooperating agencies, serve as a forum to discuss ongoing projects, to plan and propose future projects, and to prioritize treatments for each of the agencies. The Cedar Mountain Fuels Reduction and Watershed/Vegetation Restoration project will help to build upon the success of previous fuels treatments within the area.

Notification of the preparation, on-going progress and decision regarding this environmental assessment was posted on the Environmental Notification Bulletin Board (ENBB) located at <https://www.blm.gov/ut/enbb/index.phpn> on August 1st, 2013. One letter containing comments have been received to date on this project. Comments and response can be found in Appendix D. Issues analyzed in detail in Chapter 4 were identified through resource staff, cooperating agencies and interested public involvement.

A copy of the finalized EA will be mailed to Emery County, the livestock permittee, cooperating agencies and other interested parties.

### 5.2 Persons, Groups, and Agencies Consulted:

<b>Name</b>	<b>Purpose &amp; Authorities for Consultation or Coordination</b>	<b>Findings &amp; Conclusions</b>
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	Consultation pending final archaeological report. No affect determination anticipated because Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site.
Native American Tribes	Consultation as required by the American Indian Religious	Letters sent February 4, 2014 to 18 tribes/parties. One letter



	Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531) EO 13007	received back form the Hopi Tribe on February 19 <sup>th</sup> , 2014. The Hopi supports the identification and avoidance of cultural sites.
Utah State Division of Forestry, Fire and State Lands [Alison McCluskey, Southeastern Area Sovereign Lands Coordinator/ WUI Coordinator]	Collaboration and coordination to meet goals and objectives of Community Wildfire Protection Plan; coordination with BLM on potential adjacent private land treatments.	
Utah Partners for Conservation and Development (UPCD)	Collaboration in procurement of seed.	
Emery County	Project Coordination	Emery County has reviewed the EA and supports the project.
Division of Wildlife Resources (DWR)	Project Coordination.	

### 5.3 Summary of Public Participation

Notification of the preparation, on-going progress and decision regarding this environmental assessment was posted on the Environmental Notification Bulletin Board (ENBB) located at <https://www.blm.gov/ut/enbb/index.php> on August 6th, 2013. When finalized, a copy of the EA will be available by link from the ENBB. Press releases were sent to the Emery County Progress and Sun Ad. on April 15<sup>th</sup>, 2014 to solicit public comments on the Cedar Mountain EA. The EA was posted on the ENBB on April 15<sup>th</sup>, 2014 for 30 day public comment and review. One letter with scoping comments was received on November 6, 2013 and one letter with comments regarding the EA was received. Both sets of comments received were from SUWA. Comments and responses are included as Appendix D. Changes made to the EA are noted in Appendix D.

### 5.4 List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Brian Keating	Fuels Program Manager, Canyon Country Fire Zone	Collaboration, technical coordination and verification of analyses content; fuels/fire management.
Kevin Cahill	Fuels Technician, formerly of Price F.O., Canyon Country Fire Zone	Collaboration, resource team coordination; project design and planning; fuels/fire management.
Amy Adams	Acting NEPA Coordinator Price F.O.	Resource team coordination and support
Jeffery Brower	Hydrologist, Price F.O.	Air quality; water resources/quality (drinking/surface/ground); Soils.



Karl Ivory	Rangeland Management Specialist, Price F.O.	Livestock Grazing; Vegetation Excluding USFW Designated Species.
Jared Reese	Wildlife Biologist, Price F.O.	Fish and wildlife Excluding USFWS Designated Species,
Dana Truman	Range Management Specialist, Price F.O.	BLM Sensitive Plant Species
Stephanie Bauer	Rangeland Management Specialist, Price F.O.	Invasive Species/Noxious Weeds; Forestry/Woodland.
Matt Blocker	Outdoor Recreation Planner	Areas with wilderness characteristics.
Gabe Bissonette	GIS Specialist, Canyon Country Fire Zone	Project Boundary planning and coordination, map creation and consultation
Joshua Relph	NEPA Coordinator, Canyon Country Fire Zone	Resource team consultation, administrative record, data compilation, research, and analysis composition.
Leigh Grench	Canyon Country Fire Zone Archeologist	Cultural Resources and Native American Religious Concerns

## 6.0 REFERENCES, GLOSSARY AND ACRONYMS

### 6.1 References Cited

Arnold, Joseph F., Donald A. Jameson, and Elbert Hann Reid. "The Pinyon-Juniper type of Arizona: effects of grazing, fire, and tree control." Production Research Report, United States Department of Agriculture 84 (1964).

Baker, M.B., Jr., "History of Watershed Research in the Central Arizona Highlands," RMRS-GTR-29, 1999.

Baker, M.B., Jr., DeBano, L.F., Ffolliott, P.F., Gottfried, G.J., "Riparian-watershed Linkages in the Southwest," Rangeland Management and Water Resources, 1998.

Bartos, D.L., Amacher, M.C., Mueggler, W.F., "Restoration Ecology of Disturbed Lands," USDA Forest Service Research Work Unit RMRS-4301, at <http://www.fs.fed.us/rm/ogan/4301>, page created October, 1999, updated January, 2003.

Brockway, et al, Journal of Environmental Management, pp. 179-197, 2002.

Brooks, K.N., Ffolliott, P.F., Gregersen, H.M., DeBano, L.F., "Hydrology and the Management of Watersheds," 2003.

Brooks, M. L., and D. A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K. E. M. Galley, and T. P. Wilson, editors. Proceedings of the invasive species workshop: the role of fire in the spread and control of invasive species. Fire Conference 2000: The First National Congress on Fire Ecology, Prevention, and Management. Miscellaneous Publication No. 11. Tall Timbers Research Station, Tallahassee, Florida.

Bryce, et al, 2012.

<http://www.blm.gov/wo/st/en/prog/more/Landscape%20Approach/reas/coloplateau.html#agents>



Bureau of Land Management, Canyon Country Fire Zone (Previously Moab Fire District), Fire Management Plan, UT-063-04-02, UT-060-2005-042, November, 2005

Bureau of Land Management (BLM). 2008. Record of Decision and Final Resource Management Plan. Price Field Office. Price, Utah.

Bureau of Land Management, Record of Decision, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement (PEIS), September, 2007.

Bureau of Land Management, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Report (PER), June, 2007.

Bureau of Land Management, Utah Land Use Plan Amendment for Fire and Fuels Management, UT-USO-04-01, September, 2005.

Bureau of Land Management, Utah Record of Decision, Vegetation Treatment on BLM Lands in Thirteen Western States, July, 1991.

Emery County General Plan Revision for Public Lands and Resources (October, 1999)

Hann, W.J. and Bunnell, D.L., "Fire and Land Management Planning and Implementation Across Multiple Scales," *International Journal of Wildland Fire*, 10:389-403, 2001.

Kaufmann, M.R., W.H. Moir, W.W. Covington. 1992. Old-growth forests: what do we know about their ecology and management in the southwest and rocky mountain regions? pp. 1-11 In: *Old-growth forests in the southwest and rocky mountain region: proceedings of a workshop*. USDA For. Ser. Gen. Tech. Rep. RM-213

Kufeld, R.C. 1983. Responses of elk, mule deer, cattle, and vegetation to burning, spraying, and chaining of Gambel oak rangeland.

Miller, R.F., R.J. Tausch, and W.S. Waichler. 1999. Old-growth juniper and pinyon woodlands. Pp. 375-384 In: Mosen S.B., S. Richards, R.J. Tausch, R.F. Miller, C. Goodrich. (comp); *Proc – Ecology and Management of Pinyon-Juniper Communities Within the Interior West*. USDA For. Ser. RMRS-P.9.

Miller, R.F. and Tausch, R.J., "The Role of Fire in Pinyon and Juniper Woodlands: A Descriptive Analysis," *Fire Conference 2000: Proceedings of the Invasive Species Workshop*, 2001.

Miller, R. F. and Wigand, P.E., "Holocene Changes in Semiarid Woodlands: Response to climate, fire and human activities in the US Great Basin," *Bioscience* 44(7):465:474, 1994.



Miller, R.F., R.J. Tausch, D.E. McArthur, D. Johnson, and S.C. Sanderson. 2008. Development of post-settlement Pinon-Juniper Woodlands in the Intermountain West: a regional perspective Research Paper RP-69. US Department Agriculture, Forest Service, Rocky Mountain Research Station Fort Collins, Colorado

Page, Doug, USDI Bureau of Land Management, "Preliminary Thinning Guidelines for the Maintenance of Pinyon-Juniper Ecosystems," April, 2006.

Resh, Sigrid C. et al. "Fuel treatments by mulching – A synthesis of the ecological impacts". Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University, Fort Collins, CO. 2007

Riggs, Robert A., and Philip J. Urness. "Effects of goat browsing on Gambel oak communities in northern Utah." *Journal of Range Management* (1989): 354-360.

RMRS-GTR-202, "Fire Ecology and Management of the Major Ecosystems of Southern Utah," USDA Forest Service Rocky Mountain Research Station General Technical Report, Sharon M. Hood and Melanie Miller, Editors, November, 2007.

Raymond, Crystal L., Peterson, David L. "Fuel treatments alter the effects of wildfire in a mixed-evergreen forest". *Canadian Journal of Forest Research*. 35: 2981-2995, 2005

Romme, William H., Craig D. Allen, John D. Bailey, William L. Baker, Brandon T. Bestelmeyer, Peter M. Brown, Karen S. Eisenhart, M. Lisa Floyd, David W. Huffman, Brian F. Jacobs, Richard F. Miller, Esteban H. Muldavin, Thomas W. Swetnam, Robin J. Tausch, and Peter J. Weisberg (2009) Historical and Modern Disturbance Regimes, Stand Structures, and Landscape Dynamics in Piñon-Juniper Vegetation of the Western United States. *Rangeland Ecology & Management*: May 2009, Vol. 62, No. 3, pp. 203-222.

Ross, M.R., S.C. Castle, N.N. Barger. (2012) "Effects of fuels reductions on plant communities and soils in a piñon-juniper woodland." *Journal of Arid Environments* pg79 (2012) 84e92

Tausch, R.J.; West, N.E. 1988. Differential establishment of pinyon and juniper following fire. *American Midland Naturalist*. 119: 174-184.

Tausch, R.J.; West, N.E. 1995. Plant species composition patterns with differences in tree dominance on a southwestern Utah piñon-juniper site. In: Shaw, D.W.; Aldon, E.F.; LoSapio, C. tech. coords. Desired future conditions for piñon-juniper ecosystems 1994, August 8-12, Flagstaff, AZ, Gen. Tech. Rep. RM-GTR-258. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 16-23.

Wisdom, M. J. and Chambers, J. C. (2009), A Landscape Approach for Ecologically Based Management of Great Basin Shrublands. *Restoration Ecology*, 17: 740–749. doi: 10.1111/j.1526-100X.2009.00591.x



Whisenant, Steven G. "Changing fire frequencies on Idaho's Snake River Plains: ecological and management implications." *McArthur, E. Durant; Romney, Evan M.; Smith, Stanley D* (1990): 5-7.

## 6.2 Glossary of Terms

**Air Quality:** A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

**Allotment:** An area of land designated and managed for grazing by livestock. An allotment may include land not suitable for livestock grazing.

**Broadcast Burning:** Intentional burning within well-defined boundaries for reduction of fuel hazard, as a resource management treatment, or both.

**Crown Fire:** The movement of fire through the crowns of trees or shrubs, more or less independent from the surface fire.

**Dead Fuels:** Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry bulb temperature, and solar radiation.

**Drip Torch:** Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

**Fire Management Plan:** An activity plan developed to support and accomplish resource management objectives and applicable land use decisions authorized in BLM Resource Management Plans.

**Fire Regime Condition Class (FRCC):** Describes the degree of departure for vegetation from reference conditions, with Condition Class 3 representing the greatest degree of departure.

**Forbs:** A plant with a soft, rather than permanent woody stem that is not a grass or grass-like plant.

**Fuels:** Fuels include both living and dead plants, as well as wood already lying on the ground that is capable of burning. High fuel loads can contribute to hot, destructive fires.

**Fuel Moisture:** The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

**Grazing Permit:** An authorization which allows grazing on public lands. Permits specify class of livestock on a designated area during specified seasons each year. Permits are of two types: preference (10 year) and temporary nonrenewable (1 year).



**Healthy Forest Initiative:** On December 3, 2003, President Bush signed into law the Healthy Forest Restoration Act of 2003 to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes. The legislation pledges to care for America's forests and rangelands, reduce the risk of catastrophic fire to communities, help save the lives of firefighters and citizens, and protect threatened and endangered species by encouraging public participation to help develop high priority forest health projects, reduce the complexity of environmental analysis, and provide for a more effective appeal process.

**Integrated Pest Management:** Management practices that control and eradication noxious weed infestations such as Prevention, Chemical (herbicides), Biological Control, Mechanical, Controlled Burning, Grazing and Revegetation.

**Ladder Fuels:** Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. Ladder fuels instigate and advance crowning.

**Mechanical Treatment:** The employment of equipment such as mowers or masticators as the primary method of modifying or removing fuels.

**Mitigation:** Constraints, requirements, actions, or conditions to reduce the significance of or eliminate an anticipated impact to environmental, socioeconomic, or other resource values from a proposed project or land use.

**National Fire Plan (NFP):** The National Fire Plan provides national direction for hazardous fuels reduction. This direction emphasizes measures to reduce the risk to communities and the environment. The primary elements applicable to the Upper Kanab Creek Vegetation Enhancement Project are to: 1) improve prevention and suppression efforts; 2) reduce hazardous fuels; restore fire-adapted ecosystems.

**Rangeland:** Land on which the native vegetation is predominantly grasses, grass-like plants, forbs or shrubs suitable for grazing or browsing use. Includes lands revegetated naturally or artificially to provide forage cover managed like native vegetation.

**Resource Management Plan (RMP):** A document prepared by field office staff with public participation and approved by management that provides general guidance and direction for land management activities at a field office. An RMP may identify the need for fire in a particular area and for a specific benefit.

**Slope:** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

**Special Status Species:** Wildlife and plant species either federally listed or proposed for listing as endangered or threatened; state-listed or BLM determined priority species.



**Surface fuels:** Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not decayed. Surface fuels can also consist of grasses, forbs, low and medium shrubs, tree seedlings, heavier branch-wood, downed logs and stumps, and/or debris from a “lop and scatter” treatment.

**Threatened Species:** Any animal or plant species likely to become endangered within the foreseeable future throughout a significant portion of its range. These species are officially listed by the U. S. Fish and Wildlife Service.

**Treatment:** A technique or action customarily applied to improve a damaged or deteriorated area through management action such as vegetation establishment (seeding, planting, etc.), restricted use, or resource manipulation (i.e. livestock, wildlife, fire, mechanical, recreation, etc.)

**Uncontrolled Fire:** Any fire which threatens to destroy life, property, or natural resources.

**Vegetation Treatment:** Fire vegetation and fuel load treatments generally entail reducing the quantity of the fuel load to impede fire’s ability to pass through the habitat. Continuity is often “rearranged” vertically or horizontally; firebreaks or shaded fuel breaks are created in some treatments, or fuels are cut and burned on site and/or removed.

**Visual Resource Management (VRM) Classes:** Management classes are determined on the basis of overall scenic quality, distance from travel routes, and sensitivity to change.

**Wildland Fire:** Any naturally ignited, non-structure fire other than prescribed fire.

**Wildland-Urban Interface (WUI):** Lands on which buildings, homes, and other structures of human development are adjacent to or directly intermingling with undeveloped wildland or other fuel sources.

### 6.3 List of Acronyms

AIRFA - American Indian Religious Freedom Act of 1978  
BLM – Bureau of Land Management  
BMP’s – Best Management Practices  
CAA – Clean Air Act  
CCYZ – Canyon Country Fire Zone  
CFR – Code of Federal Regulations  
DOE – Department of Energy  
DR – Decision Record  
EA – Environmental Assessment  
EIS – Environmental Impact Statement  
ENBB – Environmental Notification Bulletin Board  
EPA – Environmental Protection Agency  
ESA – Endangered Species Act of 1973  
ESD – Ecological Site Description  
FLPMA – Federal Land Policy Management Act of 1976  
FMP – Fire Management Plan  
FMU – Fire Management Unit



FONSI – Finding of No Significant Impact  
FRCC – Fire Regime Condition Class  
FWS – Fish and Wildlife Service  
GHG – Green House Gasses  
HFRA – Healthy Forest Restoration Act of 2003  
IPM – Integrated Pest Management  
LUP –Land Use Plan  
MOU – Memorandum of Understanding  
NAAQS – National Ambient Air Quality Standards  
NEPA – National Environmental Policy Act  
NHPA – National Historic Preservation Act  
NFP – Nation Fire Plan  
NPS – National Park Service  
NRHP – National Register of Historic Places  
OHV – Off Highway Vehicle  
PJ – Pinion and Juniper  
PFO – Price Field Office  
POEA - Polyoxyethyleneamine  
PSD – Plastic Sphere Dispenser  
PUP – Pesticide Use Proposal  
REA – Rapid Ecological Assessment  
RMP – Resource Management Plan  
RMRS – Rocky Mountain Research Station  
ROD – Record of Decision  
SHPO – State Historic Preservation Officer  
SOP's – Standard Operating Procedures  
UDWQ – Utah Division of Water Quality  
WSA – Wilderness Study Area  
WUI – Wildland Urban Interface



## APPENDICES

### APPENDIX A: Interdisciplinary Team Checklist

#### INTERDISCIPLINARY TEAM CHECKLIST

**Project Title:** Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project

**NEPA Log Number:** DOI-BLM-UT-G02X-2013-0055-EA

**File/Serial Number:** RD49

**Project Leader:** Kevin Cahill/Joshua Relph

#### DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination*	Signature	Date
<b>RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)</b>				
PI	Air Quality	Smoke from prescribed fire may affect air quality (increased criteria pollutant emissions) and potentially the health and wellbeing of human populations. Prescribed burning emissions could cause visibility impacts even if air quality standards are not violated. However, burning is expected to be minimal. Overall, air quality in the project area is considered to be in attainment of the NAAQS.	Jeffrey Brower	10/18/13
NP	Areas of Critical Environmental Concern	After review of GIS records and the Approved RMP there are no ACECs within the project area	Josh Winkler	10/31/13
NP	BLM Natural Areas**	There are no designated BLM Natural Areas within the area affected by the Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project	Matt Blocker	10/21/13
NP	BLM Sensitive Animal Species	After GIS review, there is no documentation of BLM sensitive animal species occurring in the project area.	Jared Reese	11/7/2013
PI	BLM Sensitive Plant Species	There is potential for <i>Talinum thompsonii</i> out on the rim. Project not expected to affect	Dana Truman	11/20/13
PI	Cultural Resources	Sites identified and determined to be eligible for the National Register of Historic Places (NHRP) will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site. Cultural Resources will be analyzed in the EA.	Leigh Grench	9/26/13
NI	Greenhouse Gas Emissions	There are no currently identified regulatory standards for controlling GHG emissions or generally accepted analytical methods for evaluating project specific impacts related to GHG emissions. Consequently, the impacts of site-specific proposals cannot be determined and overall GHG emissions are expected to be minimal.	Jeffrey Brower	10/18/13
NI	Environmental Justice	There are no minority or low income populations that would be adversely effected by implementation of the Proposed Action.	Ahmed Mohsen	10/28/13
NP	Farmlands (Prime or Unique)	According to the NRCS soils surveys and knowledge of the soils, there are no prime and unique soils mapped within the	Jeffrey Brower	10/18/13



Determination	Resource	Rationale for Determination*	Signature	Date
		project area.		
PI	Fish and Wildlife Excluding USFW Designated Species	The project area includes crucial year-long habitat for mule deer. Disturbance activities in this area during May to July could have an effect on fawning success of this species within the project area. However, implementation of the proposed action would improve habitat for big game species as well as other general wildlife species. No known raptor nests in the project units.	Jared Reese	11/7/2013
NP	Floodplains	After an inspection of USGS 7.5 minute maps of the area, it is determined no floodplains as defined by EO 11988, FEMA, or Corps of Engineers is found on or near the project area	Jeffrey Brower	10/18/13
PI	Fuels/Fire Management	Implementation of the proposed action would result in a decreased threat from severe, high-intensity wildland fire and would contribute to the return to a more historic fire regime, while creating a more diverse ecosystem.	Kevin Cahill	9/26/13
NI	Geology / Mineral Resources/Energy Production	Mineral materials: stone, oil and gas, petrified wood and other saleable minerals are present, mainly in the subsurface, but will not be affected by this temporary surficial project. The project and its results will not reduce or inhibit the extraction of mineral materials.	Chris Conrad	10/22/13
NI	Hydrologic Conditions**	No changes to groundwater quality are expected. Slight variations may occur in surface runoff patterns on a micro-scale due to machinery and foot traffic. However, no new notable impacts to the hydrologic condition is expected. Impacts related to CWA would be expected to be negligible because of distance to water bodies and streams..	Jeffrey Brower	10/18/13
PI	Invasive Species/Noxious Weeds (EO 13112)	Any surface disturbing activity could result in the introduction or spread of invasive species/noxious weeds. This project has the potential to create niches in the vegetation where invasive species/noxious weeds could become established. Halogeton and Russian thistle are invasive species that are present within the project area. There are no known noxious weeds within the project area.	Stephanie Bauer	11/18/13
NI	Lands/Access	There are several rights-of-way within the proposed project area; however, no adverse impacts are expected as a result of the proposed activity. Care should be taken if heavy equipment will be operating near power or fiber optic lines.	Amanda Harrington	10/21/2013
PI	Livestock Grazing	The proposed action may require areas to be closed to grazing for at least two years due to seeding.	Karl Ivory	11/08/2013
NI	Migratory Birds.	The conversion of abundant P/J (which is mostly sterile for migratory birds) to a sagebrush/grass/shrub habitat would provide more and better habitat for migratory birds. There are no known sensitive migratory birds in the project area, according to BLM files and as per GIS review	Jared Reese	11/7/2013
NI	Native American Religious Concerns	Native American tribes were contacted in February, 2014 To date, no tribes have identified concerns or submitted comments regarding the proposed project.	Leigh Grench	9/26/13
NI	Paleontology	Proposed action does not include any surface disturbance so, although the surface is outcropping of Cedar Mountain Formation and possibly Morrison Formation (2 formations known to be rich in paleontological resources), paleontological resources are not likely to be at risk.	Michael Leschin	11.4.2013
NI	Rangeland Health Standards	The area affected by the proposed action is currently meeting Rangeland Health Standards. The proposed action would maintain these standards.	Karl Ivory	11/08/2013



Determina- tion	Resource	Rationale for Determination*	Signature	Date
NI	Recreation	The proposed action is in a Special Recreation Management Area (SRMA) and the Cedar Mountain recreation site. The SRMA requires explicit recreation management to achieve recreation objectives and provide specific recreation opportunities. The Cedar Mountain rec site will be removed from the bullhog operations and be done by handwork.	Josh Winkler	10/31/13
NI	Socio-Economics	Implementation of the Proposed Action would have no measureable social or economic impacts because the project is relatively small in scope when compared to the larger economy of the area.	Ahmed Mohsen	10/28/13
PI	Soils	Implementation of the proposed action could increase soil compaction, reduce infiltration where foot traffic and equipment operate. Removal of vegetative cover could increase soil erosion in the short term.	Jeffrey Brower	10/30/13
NI	Threatened, Endangered or Candidate Plant Species	After a site visit and review of BLM records, there is no known population of T and E plants.	Dana Truman	11/20/13
NP	Threatened, Endangered or Candidate Animal Species	No effect – because there are no known occurrences of federally listed or candidate (including sage-grouse) species in the project area following GIS review and review of BLM files. There is no designated critical habitat present either. There would be no surface water depletion that would affect federally listed fish species that occur downstream.	Jared Reese	11/7/2013
NI	Wastes (hazardous or solid)	No chemicals subject to reporting under SARA Title III will be used, produced, stored, transported, or disposed of annually in association with the project. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the project.	Jeffrey Brower	10/18/13
PI	Water Resources/Quality (drinking/surface/ground)	Some increase of surface run off could occur due to reduction of vegetation, creating local increased soil erosion in the short term.	Jeffrey Brower	10/18/13
NI	Wetlands/Riparian Zones	The isolated riparian zones located within the project area would be avoided by the proposed action. There are no wetlands within the project area.	Karl Ivory	11/08/2013
NP	Wild and Scenic Rivers	There are no eligible wild or scenic river segments within the project area	Matt Blocker	10/21/13
NP	Wilderness/WSA	There are no designated wilderness areas or WSAs within the area affected by the Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project	Matt Blocker	10/21/13
PI	Woodland / Forestry	The proposed project is within a public wood cutting area. Implementation of the project would result in the loss of woodland/forestry products. The long term effects of the project could increase the overall health of the woodlands/forestry by minimizing the possibility of catastrophic fires and increasing the resistance of residual trees to insect caused mortality.	Stephanie Bauer	11/13/2013
PI	Vegetation Excluding USFW Designated Species	Old growth pinyon/juniper woodlands would be converted to a grassland/shrubland ecosystem. Maintenance of the existing grassland and the road corridor would require the removal of invading pinyon/juniper.	Karl Ivory	11/08/2013
NI	Visual Resources	The proposed action is found to be located within the visual resource management class IV. VRM IV objectives are to provide for the management activities that require major modification of the existing character of the landscape and changes may dominate landscape components.	Josh Winkler	10/31/13



Determination	Resource	Rationale for Determination*	Signature	Date
NP	Wild Horses and Burros	As per review of GIS and the Price Resource Management Plan (2008) maps, there are no Herd Management Areas within the project area.	Mike Tweddell	9/30/13
PI	Areas with Wilderness Characteristics	17,077 acres of the Price River Unit lands with wilderness characteristics are within the proposed project area. During the project there will be a temporary loss of solitude and primitive unconfined recreation. There will be a short term loss of naturalness with the impacts of the bullhog and remaining mulched material until it decomposes naturally. The long term goal is to restore the ecosystem health by re-establishing the natural variability, stability, and diversity of the vegetative community within the project area.	Matt Blocker	10/29/13

---

**FINAL REVIEW:**

Reviewer Title	Signature	Date	Comments
Environmental Coordinator	<i>Kelly Buchner</i>	<i>6-2-2014</i>	
Authorized Officer	<i>Shirley M. Reed</i>	<i>6/2/2014</i>	



## INTERDISCIPLINARY TEAM NEPA DOCUMENTATION TRACKING CHECKLIST

**Project Title:** Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project

**NEPA Log Number:** DOI-BLM-UT-G02X-2013-0055-EA

**File/Serial Number:** RD49

**Project Leader:** Kevin Cahill/Joshua Relp

**STAFF DOCUMENTATION REVIEW:**

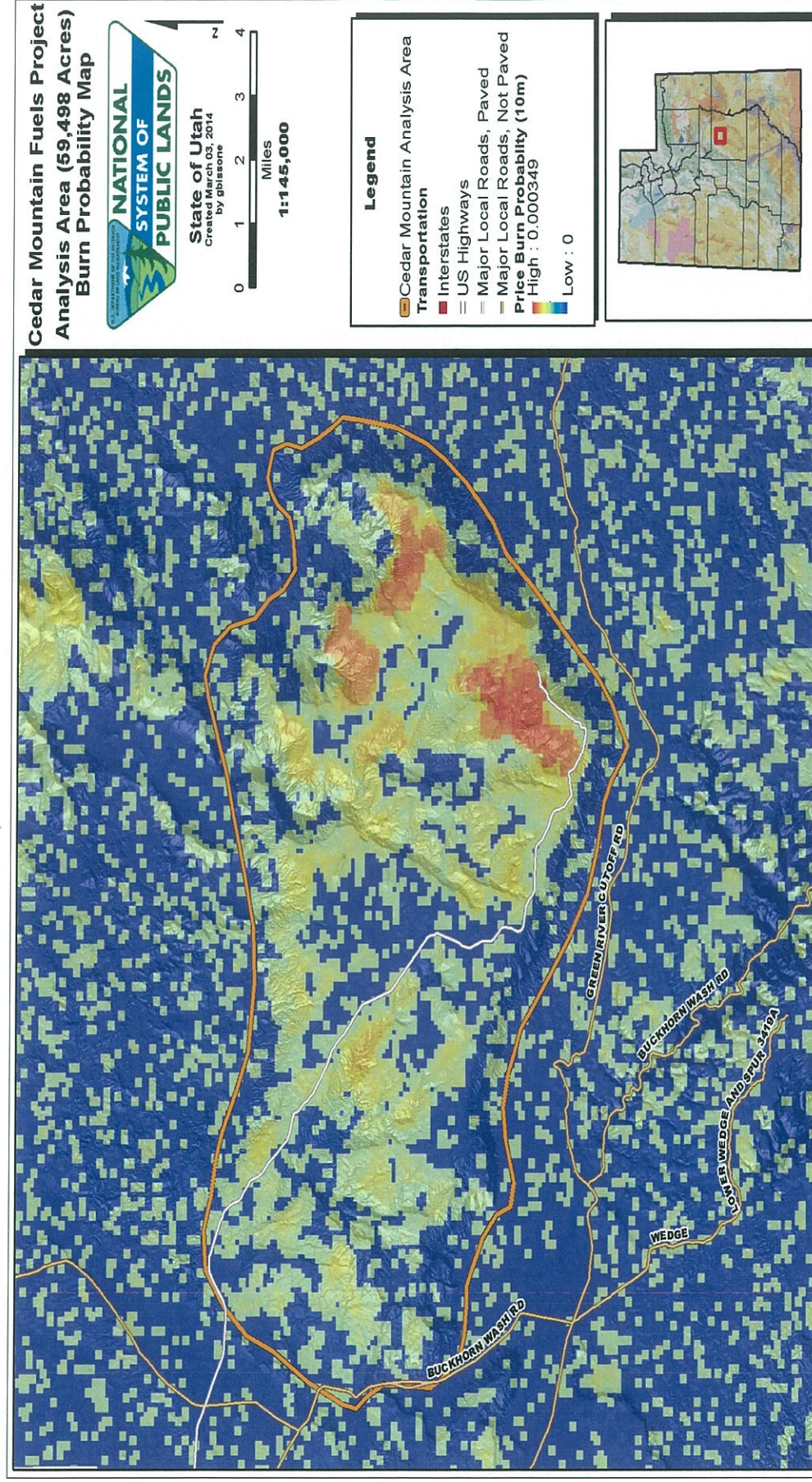
RESOURCE	SPECIALIST	DRAFT EA REVIEW INITIAL/DATE	FINAL DOCUMENTATION REVIEW INITIAL/DATE
<b>RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)</b>			
Air Quality	Jeffrey Brower	<i>JB</i> 3/25/14	<i>JB</i> 5/29/14
BLM Sensitive Plant Species	Dana Truman	<i>DT</i> 4/7/14	<i>DT</i> 5/30/14
Cultural Resources	Leigh Grench		
Fish and Wildlife Excluding USFW Designated Species	Jared Reese	<i>JR</i> 3-24-14	<i>JR</i> 5/30/14
Fuels/Fire Management	Kevin Cahill	<i>KC</i> 3-24-14	<i>KC</i> 5/29/14
Invasive Species/Noxious Weeds (EO 13112)	Stephanie Bauer	<i>SB</i> 4/1/14	<i>SB</i> 5/30/14
Livestock Grazing	Karl Ivory	<i>KI</i> 4/2/14	<i>KI</i> 5/30/14
Soils	Jeffrey Brower	<i>JB</i> 3/25/14	<i>JB</i> 5/29/14
Water Resources/Quality (drinking/surface/ground)	Jeffrey Brower	<i>JB</i> 3/25/14	<i>JB</i> 5/29/14
Woodland / Forestry	Stephanie Brower	<i>SB</i> 4/1/14	<i>SB</i> 5/30/14
Vegetation Excluding USFW Designated Species	Karl Ivory	<i>KI</i> 4/2/14	<i>KI</i> 5/30/14
Areas with Wilderness Characteristics	Matt Blocker	<i>MB</i> 3/26/14	<i>MB</i> 5/30/14

### FINAL REVIEW:

REVIEWER TITLE AND NAME	DRAFT REVIEW INITIAL/DATE	FINAL REVIEW INITIAL/DATE
Environmental Coordinator:	<i>Seely Boudreau</i>	<i>6-2-2014</i>
Authorized Officer:	<i>Shane M. Moore</i>	<i>6/2/2014</i>

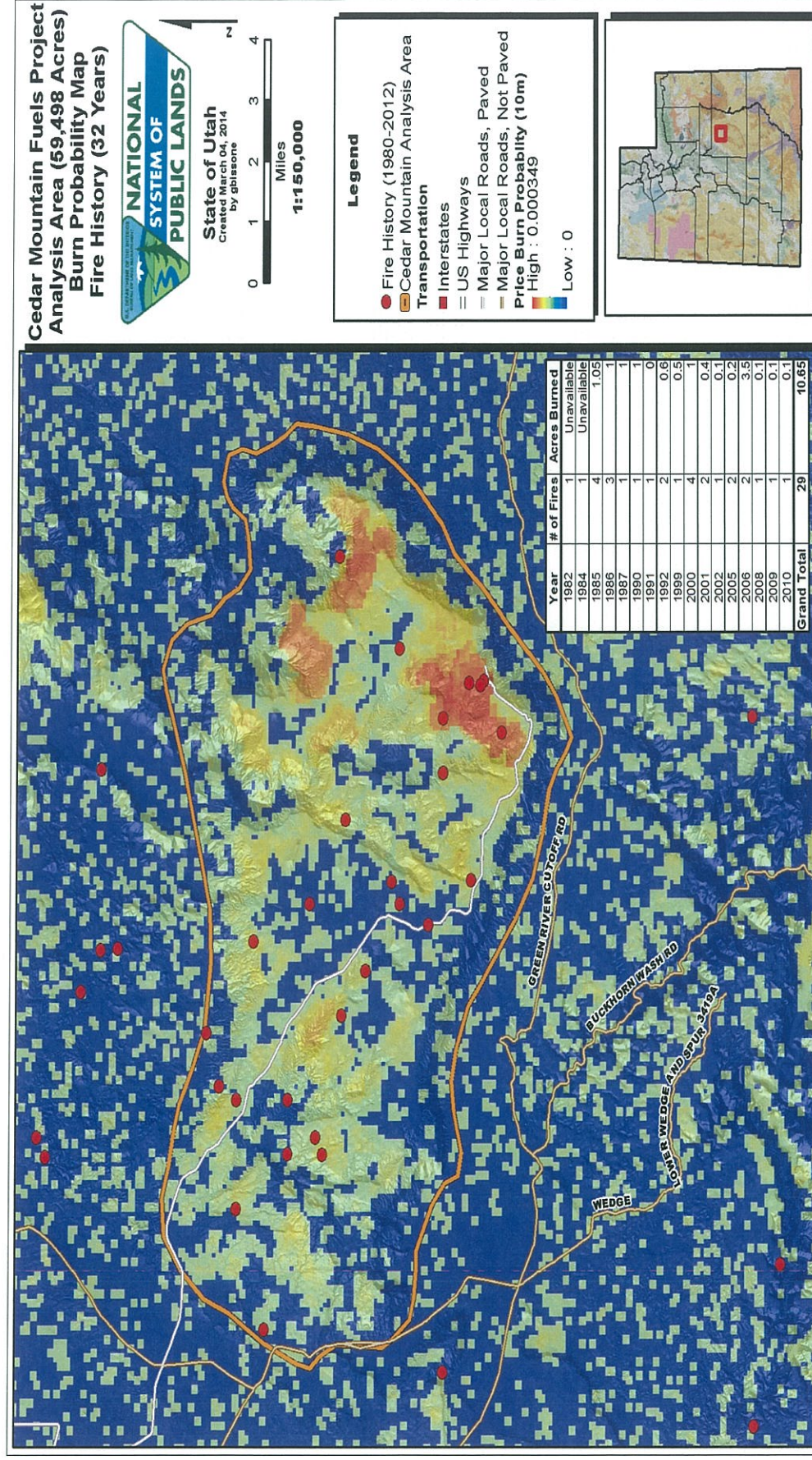


# APPENDIX B: Cedar Mountain Burn Probability





# APPENDIX C: Fire History in the Cedar Mountain Project Area





## APPENDIX D: Public Scoping Comments and BLM Responses

Scoping Comments - Text from Neal Clark: Southern Utah Wilderness Alliance-received November 6, 2013	Response to Comment
<b>Comment (pg. 3):</b> Under FLPMA Section 201, BLM is obligated to maintain a current inventory of all public lands that it manages. BLM should conduct an updated wilderness inventory prior to authorizing any activities, including the proposed project.	<p>Refer to <i>Section 3.3.12 Non-WSA Lands with Wilderness Characteristics</i>. Approximately 17,077 acres on BLM lands were determined to have wilderness characteristics. The BLM inventoried and evaluated areas for wilderness character as part of the 2008 RMP process. In the October 2008 Price Field Office Resource Management Plan, these lands were not selected for management of wilderness characteristics.</p> <p>The BLM stands by its wilderness inventory of this area; it has received no significant new information which would cause it to question its earlier inventories.</p>
<b>Comment (pg. 5):</b> BLM must fully analyze a reasonable range of alternatives in the Cedar Mountain EA. A reasonable range of alternatives for the goals of this project proposal should include alternatives that would: adjust/reduce domestic livestock grazing on a long-term or permanent basis; reduce livestock grazing in conjunction with aerial seeding of native species; establish fire breaks surrounding any private property and prescribe limited hand thinning elsewhere; modify the fire suppression management regime in the project area; fully protect the lands with wilderness characteristics and other resources such as cultural resources, air quality, water quality, soils and native vegetation; and a no action alternative.	<p>The purpose of this project in to reduce pinyon/juniper and cheatgrass-encroached sagebrush/shrubsteppe communities and restore diversity to pinyon/juniper woodlands that support deer winter range and a vast array of wildlife.</p> <p>The BLM has analyzed reasonable alternatives that address the purpose of the proposed project, including:</p> <p>Reducing livestock grazing in conjunction with seeding. This is incorporated in the Proposed Action, Project Details, <i>Seeding</i> (Section 2.2).</p> <p>An alternative that adjusts/reduces domestic livestock grazing would not meet the purpose of the Proposed Action, <i>Section 2.2</i> because grazing regime alterations do not have the ability to reduce/remove pinyon/juniper and cheatgrass in sagebrush/shrubsteppe communities, additional intervention is needed to successfully accomplish this. Therefore an alternative was not developed that considered adjustments/reductions in domestic livestock grazing as it is out of the scope of this document.</p> <p>An alternative that develops fire breaks around private property is not a purpose or need of the proposed project therefore an alternative was not developed that</p>



	<p>considered this type of action as it is out of the scope of this document.</p> <p>An alternative that modifies fire suppression management regime in the project area does not meet the purpose or need of the proposed project; therefore an alternative was not developed that considered this type of action as it is out of the scope of this document.</p> <p>The alternatives developed fully protect the Non-WSA lands with wilderness characteristics according to management directions and prescriptions developed in the 2008 Price RMP.</p> <p>Resources impacted by proposed actions such as soils, native vegetation, cultural resources, air quality and water quality have been fully analyzed in the document</p>
--	---



<p><b>Comment (pg. 7):</b> There is a dearth of scientific research relevant to vegetation projects of this type within the Colorado Plateau. The vast majority of scientific literature involves the Great Basin and other geographic regions with little similarity to the unique, arid Colorado Plateau. In fact, the few limited studies that do exist (<i>i.e.</i>, Shay Mesa) indicate that projects of this type actually result in an increase in non-desirable, noxious and invasive species. BLM must take a hard look at the risks of these types of projects within the Colorado Plateau and must support its conclusions with relevant, Colorado Plateau-specific research and data.</p>	<p>The following references include information from the Colorado Plateau, Great Basin and other areas near the project:</p> <p>Miller and Wigand (1994), Miller and Tausch (2001), Ross, Castle and Barger (2012), and local monitoring results of similar projects throughout the Moab, Monticello and Price Field offices.</p> <p><u>4.2.1.5 Fuels/Fire Management</u></p> <p>A recent study shows that understory cover in mastication treatments was 15 times greater following two growing seasons, compared to untreated controls (Ross, 2012).</p> <p><u>4.2.1.11 Vegetation - Indirect Effects</u></p> <p>Ross (2012) found that in two growing seasons after treatment, the mastication sites' understory cover was increased by 64% of pre-treatment cover values; these values clearly exceed the restoration target (55% increase ) for plant cover after treatment.</p>
<p><b>Comment (pg.7):</b> BLM must thoroughly consider the impacts from the proposed project and develop extensive monitoring plans to track the efficacy of the treatments. This extensive monitoring program should be developed and implemented in conjunction with the U.S. Geological Survey, as the agency has significant experience studying landscape impacts in Utah, and it will allow BLM to take advantage of the expertise and resources that result from coordinated agency monitoring. BLM should not</p>	<p>See <u>Section 2.2 Monitoring.</u></p> <p>See <u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change addresses Climate Change.</u></p>

approve a project that will release a significant amount of carbon into the atmosphere until it thoroughly analyzes the climate change effects that may result from this project and establishes a monitoring plan to track the projects impacts, both positive and negative.	
<p><b>Comment (pg. 7):</b> Pursuant to NEPA, the Cedar Mountain EA must address the cumulative and indirect impacts from off-road vehicle use, domestic livestock grazing and other foreseeable uses and impacts to the public lands managed by the Price FO. BLM must also address the anticipated cumulative and indirect impacts from climate change (discussed in detail below), increased drought, invasive and non-native vegetation and the historical and potential incidence of natural fire in the Cedar Mountain EA when analyzing whether certain lands should be treated.</p>	<p><u>Section 4.3 addresses Cumulative Impacts</u></p> <p><u>Indirect Impacts</u> to soils, vegetation, invasive species, livestock grazing, wildlife and fuel/fire management are discussed in <u>Chapter 4.2 Direct and Indirect Impacts</u></p> <p>Off road vehicle use by the public is prohibited in this area.</p> <p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses <u>Climate Change</u></p> <p>Drought is a natural cycle of the arid southwest.</p> <p>Historical fire data is discussed in <u>Section 3.3.5 Fuels/Fire Management</u>.</p> <p>Fire potential for the Cedar Mountain area can be found in <u>Appendix B: Fire probability in the Cedar Mountain Project Area</u>.</p> <p>The UDWR will continue Range Trend Studies in the area. Range Trend Studies monitor and detect changes in vegetation composition (range trend) in big game winter ranges. All treatment units are located in winter range.</p> <p>See <u>Section 3.3.4 Fish and Wildlife &amp; Section 4.3.1.4 Fish and Wildlife</u> for the status of big game habitat.</p> <p>See <u>3.3.5 Fuels/Fire Management</u> for information on historical wildfire in or near the proposed project area.</p>
<p><b>Comment (pg. 7):</b> BLM should develop an objective, quantitative monitoring program to determine livestock grazing and wildlife impacts on native grasses, shrubs and forbs.</p>	
<p><b>Comment (pg.7):</b> BLM should provide empirical data illustrating both the status of wildlife habitat and historical wildfire in or near the proposed project area. This data is necessary to support the stated purpose and need of the project, which is improvement of wildlife habitat and reduction of hazardous fuel loads.</p>	



<p><b>Comment (pg.8):</b> The Cedar Mountain EA must address the lack of documented scientific research and, in turn, support the proposed action with relevant Colorado Plateau-based research. NEPA’s implementing regulations expressly state, when “there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.” 40 C.F.R. § 1502.22.</p>	<p>Though there is less information directly related to the Colorado Plateau, there is documented scientific research that has been done on the Colorado Plateau. This research has been used in this document, Ross <i>et al</i> (2012), Miller and Tausch (2001) and local monitoring data from similar project throughout Moab, Monticello and Price.</p> <p>In addition, much of the research that has been conducted in the western U.S. has relevance to the vegetative response to mastication, lop and scatter, herbicide application and seeding that is proposed in this EA.</p>
<p><b>Comment (pg. 12):</b> The Cedar Mountain project, which proposes to disturb a large section of undeveloped public lands, could have serious impacts to the ecosystem when combined with the likely inevitable impacts of climate change. To ensure these impacts are minimized or eliminated, and to comply with its duty under NEPA, BLM must take a hard look at the proposed project’s impacts on climate change and climate change’s impacts on the project. <i>See</i> 40 C.F.R. § 1508.7.</p>	<p><u>See Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u>, which addresses Climate Change</p> <p>The area of surface disturbance is <i>not</i> large: The proposed treatment units range from 50 acres to 500 acres with initial treatment averages of 500 to 2000 acres a year (0.8% to 3.3% of the project area) of which no more than 2,000 acres on average (3.3 % of project area) would be treated in any one year.</p> <p>The treatment units are <u>not</u> relatively undisturbed; As stated in <u>Section 1.2: Background</u> “Within the last 50 years many areas within the Cedar Mountain area have been chained. Approximately 60-70% of the mesa tops within the proposed project area has been chained in the past”.</p>
<p><b>Comment (pg. 12):</b> To best protect ecosystems, BLM must manage for resilience and sustainability. To do this, the Cedar Mountain EA must include quantitative summaries or descriptions of baseline information necessary to evaluate climate change effects on the resources in the project area. The EA must also quantify the greenhouse gas emissions expected from the proposed project, and analyze their potential contribution to global warming.</p>	<p><u>See Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Greenhouse Gas Emissions</p>

<p><b>Comment (pg. 12):</b> An understanding of both the predicted impacts of climate change, and the project's potential contributions to climate change, should shape the alternatives under consideration by BLM in the Cedar Mountain EA. BLM must select an alternative only after taking into account how climate change is already affecting the resources in the project area, and assessing the contributions of the project to climate change. The EA must include current research and findings on climate change in its analyses, and must address climate change in the cumulative impacts analysis. The EA must employ responsive management decisions that will best protect the undeveloped and roadless areas in the proposed project area, as these intact ecosystems can provide strong resistance to the effects of climate change.</p>	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> which addresses Climate Change</p> <p>The treatment units are <i>not</i> relatively undisturbed; As stated in <u>Section 1.2: Background</u> “Within the last 50 years many areas within the Cedar Mountain area have been chained. Approximately 60-70% of the mesa tops within the proposed project area has been chained in the past” .</p>
<p><b>Comment (pg. 12):</b> The Cedar Mountain EA must take a hard look at mitigating vulnerability to climate change. BLM must ensure that the project's soil and vegetation-disturbing activities do not render ecosystems less resilient and more vulnerable to the negative effects of climate change.</p>	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Climate Change</p> <p><u>Section 4.2.1.8 Soils and 4.2.1.11 Vegetation</u> address direct and indirect impacts of the proposed activities on soil and vegetation</p>
<p><b>Comment (pg. 16):</b> Scientific studies document the expansion and contraction of pinyon and juniper forests as a natural phenomenon that</p>	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Climate Change</p>



<p>relates to changing climates. BLM should not seek a historical range of pinyon and juniper, but rather a <i>sustainable</i> range of trees, and seek management that offers the greatest potential for resource adaptability to future conditions. Until research can demonstrate the optimum sustainable ranges and densities of pinyon and juniper trees, BLM should not conduct treatments in these ecosystems. It is entirely possible that current ranges of pinyon and juniper trees, although they may have been increasing over the previous century, are at sustainable levels and simply part of a natural expansion that will retract when the climate changes again. Accordingly, the Cedar Mountain EA must examine the causes for the increased presence of pinyon and juniper forests (<i>i.e.</i> whether the expansion is due to increased atmospheric carbon, or other forecasted responses to climate change). The EA must also consider whether the project will have to be repeated in the future to “maintain” the artificial levels and goals imposed by the proposal. If the increase is, in fact, a response to atmospheric carbon levels or a changing climate, the proposed action is not sustainable.</p>	<p>The purpose of this project is to reduce pinyon/juniper and cheatgrass-encroached sagebrush/shrubsteppe communities and restore diversity to pinyon/juniper woodlands that support deer winter range and a vast array of wildlife. The project does not seek to restore a historical or <i>sustainable</i> range of pinyon and juniper, but rather to provide habitat to support wildlife, especially deer winter range (3.3.4).</p> <p>The purpose of this project is to ultimately reduce fuels an improve wildlife habitats by providing areas with an early successional component. The EA does not need to consider whether the project will have to be repeated in the future as the proposed action is not designed to be a sustainable condition for the habitat but rather to provide areas that have an early successional component over the life of the project. Future natural events, wildlife populations, UDWR objectives and public lands uses are ever evolving, therefore future habitat needs beyond the life of this project are not in the scope of this project.</p>
<p><b>Comment (pg. 18):</b> Scientific studies show that undisturbed pinyon and juniper woodlands and their soils in Utah are important sources of</p>	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Carbon Sequestration</p>

<p>carbon sequestration. BLM must take a hard look at maintaining the pinyon and juniper stands in the project area as an especially viable method of carbon sequestration in this ecosystem, as well as a natural ecosystem response to climate change, and objectively evaluate and disclose the benefits and ecological costs of the proposal to inform the decision-maker and the public.</p>	
<p><b>Comment (pg. 18):</b> The Cedar Mountain EA must consider the available scientific data and studies regarding carbon sequestration in forests and forest soils, and analyze the potential impacts from reducing pinyon-juniper forests in relation to carbon sequestration and climate change. The EA should quantify the amount of carbon that will be released into the atmosphere from the destruction of the trees and disturbance of the soils, and disclose this information in the EA.</p>	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Carbon Sequestration</p>
<p><b>Comment (pg. 19):</b> BLM must take a hard look at the Cedar Mountain project's risk of spreading invasive species by acknowledging and disclosing the increased risks and potential impacts of invasive species in relation to the proposed project. Given that so many of the predicted outcomes of climate change center on increased soil erodability, dust storms, shrinking water resources, loss of riparian areas, invasion of exotic plants and the spread of hotter, larger</p>	<p><u>Section 4.2.1.8 Soils</u> and <u>4.2.1.11 Vegetation</u> addresses direct and indirect impacts of the proposed activities on soil and vegetation</p> <p><u>Section 4.2.1.6 Invasive Species/Noxious Weeds</u> addresses direct and indirect impacts of the proposed activities on Invasive Species/Noxious Weeds.</p>



wildfires, BLM must design alternatives that minimize soil disturbance.	
<b>Comment (pg. 19):</b> The Cedar Mountain EA must include mitigation measures to address the potential introduction and spread of invasive species if any surface disturbing activity is approved.	<p>Section 2.2 <u>Herbicide</u>: Application of Active Ingredient (A.I.) Imazapic herbicide would mitigate the potential introduction and spread of invasive species.</p> <p>Project proposal includes treatment of invasives. The SOPs developed and analyzed in the Final Programmatic Environmental Report, Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report and the Final Programmatic Environmental Impact Statement, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement are incorporated into this project.</p> <p><u>Section 4.2.1.6 Invasive Species/Noxious Weeds</u> addresses direct and indirect impacts of the proposed activities on Invasive Species/Noxious Weeds.</p> <p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Carbon Sequestration.</p> <p><u>Section 4.3 Cumulative Impacts Analysis</u> addresses cumulative impacts, foreseeable projects and past and present actions.</p>
<b>Comment (pg. 20):</b> The Cedar Mountain EA must disclose the potential cumulative impacts of these projects and other foreseeable projects on the release of carbon gases into the atmosphere, as well as the decrease in the ability of the “treated” areas to capture carbon at the levels previously captured. The EA must also address how such treatments will affect the ability of the natural resources managed by the Price FO to respond to changes wrought by global warming.	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Carbon Sequestration.</p> <p><u>Section 4.3 Cumulative Impacts Analysis</u> addresses cumulative impacts, foreseeable projects and past and present actions.</p>
<b>Comment (pg. 20):</b> The Cedar Mountain EA must address the cumulative impacts from other proposed vegetation treatments in the Price FO, ORV use on public lands in Utah and other foreseeable uses and impacts to the surrounding public lands, including climate change.	<p><u>Section 1.8.1 Greenhouse Gases, Carbon Sequestration and Climate Change</u> addresses Carbon Sequestration.</p> <p><u>Section 4.3 Cumulative Impacts Analysis</u> addresses cumulative impacts, foreseeable projects and past and present actions.</p>

Furthermore, when analyzing whether certain lands should be treated, the EA must fully evaluate climate change and the anticipated cumulative and indirect impacts from increased drought and fire in the project area.	
<b>Comment (pg. 21):</b> Pursuant to the NHPA, BLM must initiate consultation with the SHPO, relevant and affected Tribes and other interested parties, and must conduct a Class III cultural resource inventory of the area of potential effects of the proposed Cedar Mountain project. Meaningful consultation must be conducted prior to issuing and decision and BLM must seek ways to avoid and protect any and all cultural resources that it discovers.	<u>Section 3.3.3 Cultural Resources</u> and <u>4.2.1.3 Cultural Resources</u> address all cultural issues.
<b>Comment (pg. 23):</b> The proposed action will cause extensive surface disturbance to a large, relatively undisturbed landscape and thus has the potential to impact air quality. Pursuant to FLPMA, NEPA and the Clean Air Act, the Cedar Mountain EA must ensure compliance with air quality standards and statutes, and must model the potential impacts to air quality.	<p>The treatment units are not relatively undisturbed; As stated in Section 1.2: Background “Within the last 50 years many areas within the Cedar Mountain area have been chained. Approximately 60-70% of the mesa tops within the proposed project area has been chained in the past”.</p> <p>The area of surface disturbance is not large: The proposed treatment units range from 50 acres to 500 acres with initial treatment averages of 500 to 2000 acres a year (0.8% to 3.3% of the project area) of which no more than 2,000 acres on average (3.3 % of project area) would be treated in any one year.</p> <p>See Section <u>4.2.1.1 Air Quality</u>: As discussed under the proposed action, smoke management would comply with Utah Department of Air Quality (DAQ) regulations</p> <p>See <u>Section 4.2.1.8 Soils</u> - potential soil erosion and dust from the proposed project is analyzed. Mastication, mulch and debris from the treatment would have a stabilizing effect on soils and vegetative communities. It would provide a protective layer for seedling germination of the aerial seed treatment that would have occurred prior to the</p>
<b>Comment (pg. 24):</b> Conducting surface disturbing actions in relatively undisturbed landscapes will result in increased dust	



generation. Windblown dust deposited on snowpack has significant impacts on mountain snow packs—including earlier and faster run-off, which affects water resources, watersheds, vegetation, and wildlife habitat. Precluding new surface disturbances on the wilderness-quality lands proposed in ARROWA and directing the project proposal to previously disturbed areas will help minimize surface disturbance, soil erosion and windblown dust. BLM must analyze the estimated potential soil erosion and dust from the proposed project and minimize soil disturbance and the resulting generation of dust.	<p>mechanical/hand treatments, retain moisture, and allow existing understory plants to recover post-treatment.</p> <p>Refer to <i>Section 3.3.12 Non-WSA Lands with Wilderness Characteristics</i> BLM lands determined to have wilderness characteristics. The BLM inventoried and evaluated areas for wilderness were not selected for management of wilderness characteristics as part of the 2008 RMP process. Price Resource Management Plan (RMP), October 2008 (pg. 35-36).</p>
--	---

Draft EA Comments - Text from Neal Clark: Southern Utah Wilderness Alliance-received May 15 <sup>th</sup> , 2014	Response to Comment
<i>Comment (pg. 1)</i> : The EA fails to take a hard look at potential impacts.	Potential impacts within the analysis area were identified through the IDT checklist and are discussed in Chapter 4.
<i>Comment (pg. 2)</i> : The EA fails to identify where treatment units are located within the analysis area.	Phase 1 unit description and map added to EA (pg. 18, App. K). Language added, stating that additional NEPA will be completed if additional phases are identified (pg.18)

<i>Comment (pg. 2):</i> The Cedar Mountain EA merely outlines a broad range of possible treatment methods within unknown treatment areas within a larger project area.	Specific treatment methods are discussed in section 2.2 Alternative A – Proposed Action. These treatment methods incorporate BMP's, SOP's, and restrictions. These methods are carried forward and discussed in Chapters 3 & 4 for use within the analysis area.
<i>Comment (pg. 3):</i> With regard to the potential impacts to BLM-identified wilderness character lands, the EA concludes that the potential treatments “could include actions that maintain, protect, or improve wilderness characteristics or actions that result in the complete or partial loss of these characteristics.”	As stated in section 3.3.12 Non-WSA Lands with Wilderness Characteristics the Price ROD RMP/EIS (pages 35-36) made the determination that all of the non-WSA lands with wilderness characteristics within the analysis area would not be managed for those characteristics.
<i>Comment (pg. 3):</i> NEPA “guarantees that the relevant information be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision.”	The Cedar Mountain Project has been listed on the ENBB since 8/6/2013. In addition, a press release was run in the Emery County Progress on Tuesday April 15 <sup>th</sup> , 2014. One interested party to date has sought project clarification by requesting additional information, GIS data, and face to face meetings. All requests were fulfilled by the BLM Fuels program. No new information/data requests have been made to date.
<i>Comment (pg. 4):</i> The EA fails to analyze a proposed alternative that would fully protect lands found by the BLM to possess wilderness characteristics and those lands proposed for wilderness designation in ARROWA.	EA updated. See section 1.8.2 Externally Proposed Wilderness and section 2.4 Alternatives Considered, but Eliminated from Further Analysis
<i>Comment (pg. 5):</i> Fire history/risk does not support vegetation treatments needs in Non-WSA lands with wilderness characteristics.	<p>Fire history alone does not determine fire risk/potential and/or ecosystem degradation. As discussed in Section 1.3 Need for the Proposed Action, much of Cedar Mountain area is classified as FRCC 3. FRCC 3 has the following attributes (appendix K):</p> <ul style="list-style-type: none"> <li>• Fire regimes have been significantly altered from their historical range.</li> <li>• The risk of losing key ecosystem components is high.</li> <li>• Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns.</li> <li>• Vegetation attributes have been significantly altered from their historical range.</li> </ul>



## **APPENDIX E: Fuels Management Best Management Practices**

### **Fuels Management Activities Standard Operating Procedures and Best Management Practices**

These Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) are designed to achieve resource management mitigation proposed by various disciplines specifically for fuels management-related activities. Because fuels management activities are dynamic and largely dictated by budget and contracting constraints, the majority of these mitigation measures are based on site-specific conditions and implemented when necessary to meet resource objectives for fuels management actions. Primary SOPs and BMPs that apply to all fuels management-related activities are listed as items 1, 2, and 3 below.

#### **SOPs and BMPs Applicable to All Fuels Management-Related Activities**

1. Areas with sensitive cultural or historical resources will be identified utilizing flagging or GPS/GIS technology prior to project implementation, and will be avoided or protected utilizing buffer zones, hand treatment of vegetation, or other non-ground disturbing actions. If undocumented historic, archaeological, or paleontological resources are encountered during treatment, activities will be stopped until the authorized officer and appropriate field office staff members determine the best option for mitigation.
2. Fuels management activities in designated wilderness and/or Wilderness Study Areas (WSA) will require application of techniques to minimize surface disturbance and permanent impacts to naturalness. Activities in designated wilderness will follow the management prescriptions included as part of the enabling legislation. Activities in WSA's will follow the procedures and guidelines incorporated in H-8550-1, *Interim Management Policy for Lands under Wilderness Review*. Activities in BLM Natural Areas will follow the prescriptions outlined in the Resource Management Plan for the Field Office in which the project is being implemented.
3. Work may be conducted by BLM crews with coordination and potential assistance from other federal and Utah state agencies and/or BLM-contracted crews. In the event a contract is utilized for fuel management activities, the following stipulations will be included in the contract language:
  - The Government will identify unit boundaries for the work executed under the contract and will include all known locations of cadastral markings. The contractor will, immediately upon entering a project area, begin to locate and take action to protect all known survey monuments found within the project area. In addition, contractors will be directed to protect any previously unknown survey monuments that are discovered during the duration of the project. Survey monuments include but are not limited to: General Land Office and BLM Cadastral Survey monuments and accessories (including bearing trees, bearing objects, posts marked with scribing, or bearing tags), reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military

control monuments, and recognizable civil (both public and private) survey monuments. In the event obliteration or disturbance of any of the above should occur, the incident will be immediately reported, in writing, to the authorized officer. Where General Land Office or BLM right-of-way monuments or references are obliterated during operations, a registered land surveyor or BLM cadastral surveyor will be contacted to restore the monument.

- Contractors and all contracted representatives will prevent the pollution of air, soil and/or water throughout operations. The contract will include a cleanup and/or restoration clause in the event that operations or equipment failure or other actions by the contractor, contracted employees and/or representatives result in the pollution of public lands. Contract language will also define a “hazardous substance,” specify a “reportable quantity” of released hazardous substance, and describe notification regulations in the event a reportable quantity of hazardous substance is released.
- Contract specifications will include federal regulations regarding sanitary facilities for staging areas and/or worker campsites, trash disposal requirements, clean-up requirements, and other pertinent regulations.

4. All fences constructed or repaired for the purposes of fire and fuels or fire and fuels-related projects will conform to BLM Manual Handbook H-1721-1 design and construction standards. Fencing details will be determined on a project-specific basis by the purpose and use for the fence (type of animal, topography, season of use, intensity of animal pressure against the fence, etc.).

### **Site-Specific SOPs and BMPs**

#### General Wildlife

(Note: Other stipulations and/or mitigation in addition to those listed below may be required for site-specific treatments.)

1. Trees containing obvious nesting cavities and/or stick nests will be avoided when feasible.
2. Active nest sites will be monitored by a qualified biologist during authorized treatment activities that may impact the behavior or survival of raptors at a nest site.

#### Range/Livestock

1. Grazing permittees will be given advance notice prior to broadcast burning and when workers with chainsaws and/or mechanical mastication equipment are expected to be in pastures. No fencing will be altered during the project implementation period unless a specific plan is included in the proposed action. Gates normally kept closed or identified as such will be closed to prevent impact to cattle if they are scheduled to be in a treatment area at the time work is ongoing.



2. Livestock will be excluded from seeded portions of pastures for at least two growing seasons or until management objectives have been accomplished. Coordination, cooperation and consultation with the affected grazing permittees would be followed as outlined in 43 CFR 4130.4 – Authorization of Temporary Changes in Grazing Use within the Terms and Conditions of Permits, including Temporary Nonuse, and under 43 CFR 4180 – Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration. Prior to the implementation of seeding treatments, it is recommended that a Grazing Use Agreement or other written agreement be completed. The written agreement would outline the two year growing season rest requirement and subsequent actions agreed to by both the affected grazing permittees and the BLM.

### **SOPs and BMPs Applicable to Specific Fuels Reduction Activities**

#### **Mechanical Treatment**

1. The use of heavy machinery such as mechanical masticators will be discontinued at the discretion of the project inspector during periods of precipitation when soil moisture content could increase the potential for deep ruts and/or excess soil compaction.

2. Prior to mobilization in a new project area, all heavy equipment will be power washed off-site to remove potential contaminants. Cleaned equipment will be inspected by the authorized contracting officer to assure that equipment used in mechanical treatment is free of soil and other debris that could contain invasive weed seed or other plant parts prior to transport and use at the project site.

3. Heavy equipment will generally not be utilized within 100 meters of riparian areas. In areas of special concern such as those requiring removal of dense invasive species, a resource advisor will be consulted. Mechanical fuel removal may be allowed to reduce fuels and/or invasive species in areas of special concern. Native riparian vegetation such as willows and cottonwoods are plant species targeted for restoration and will continue to be selectively avoided during riparian treatment.

#### **Prescribed Fire**

1. Prescribed fire is normally conducted in the early spring, late fall, and winter months, and only under specific conditions dictated by humidity, wind speed, moisture levels, and time of day. A detailed burn plan delineates weather and fuel moisture conditions required to meet resource objectives. A test fire is typically conducted prior to full ignition to ensure resource objectives can be met. Ignition of burns are conducted by hand (drip torches using a diesel/gasoline mixture), aerial ignition, or by truck-mounted terra torch (utilizing a gasoline/alumagel mixture). Mitigation measures associated with burning-related hazardous materials are included in the risk assessment, job hazard analyses appendix in each authorized burn plan.

2. All prescribed fire will be conducted consistent with the regulations and policies set forth by the Utah Division of Air Quality permitting process as specified in Utah Administrative Code Rule R307-204, Emission Standards: Smoke Management, and the Utah Smoke Management Plan. The goal of this process is to minimize the impacts to air quality from prescribed fire projects. These rules and procedures are designed to coordinate multiple burning projects



conducted by multiple agencies to assure that prescribed fires are permitted at a time when weather and atmospheric conditions allow for adequate smoke dispersal.

#### Manual Treatment (Lop and Scatter and/or Hand Piling)

1. Manual thinning is typically used in areas not suitable for mechanical treatment such as steep, rocky slopes, in areas with resources that require mitigation such as cultural or riparian, or in areas where biomass utilization (firewood permitting) is desirable. Cut trees and brush from hand thinning is either scattered across the ground or stacked into piles to add surface fuels for follow-up prescribed fire. Contract stipulations state that pile size will be no larger than six feet by six feet to mitigate potential heat-related soil damage from burned piles.

2. Piles are burned during peak soil moisture conditions, preferably during periods of light snow cover or during precipitation events, to minimize soil sterilization and to decrease mortality risk to nearby live trees. In riparian areas, piles will not be constructed within the center of the draw or in areas that could be impacted by normal flood flows.

#### Herbicide Use

1. The use of specific herbicide active ingredients and formulations on BLM lands in Utah are authorized by the Final Environmental Impact Statement and Record of Decision (Utah) for Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991b), and the Record of Decision for the 17 Western States Vegetation Management Programmatic Environmental Impact Statement, September, 2007. Both of these documents identify potential impacts to the natural and human environment from the use of herbicides, incorporate standard operating procedures and mitigation measures to ensure the protection of resources, and approve for use on western BLM lands specific herbicide active ingredients. Standard operating procedures (SOPs) are the management controls and performance standards intended to protect and enhance natural resources potentially affected by vegetation treatments that include the use of herbicides. The use of a specific list of herbicide active ingredients and formulations is approved contingent upon uses and application rates as specified in an approved Pesticide Use Proposal (PUP) and on individual herbicide product labels. Application of active ingredients is allowed only where state registration permits the use of these ingredients.

2. The BLM will comply with all Utah state registration requirements for the use of herbicides. In herbicide treatment applications, the BLM Canyon Country Fire Zone will follow SOPs for herbicide use identified in the 2007 Vegetation Management PEIS to ensure that risks to human health and the environment from treatment actions are kept to a minimum. In addition to using the SOPs identified in Appendix A, the BLM will also implement mitigation measures described in the 2007 Vegetation Management PEIS to alleviate potential adverse environmental effects as a result of vegetation treatment activities using herbicides. Herbicides may be applied manually with hand-held devices, aerially, or with broadcast sprayers from an ATV. In fuel management activities that include the use of herbicides, both the SOPs and mitigation measures mentioned above will be attached to the environmental assessment as appendices.

#### Seeding

1. Fuels management actions may include seeding portions of or an entire project area following or prior to treatment with both native and selected non-native grasses, forbs and browse species. Seed selection is determined through collaboration with resource specialists



and from monitoring results in similar vegetative communities. Seed selection is also based upon the most current data regarding the establishment of species likely to promote successional changes toward the desired vegetative community.

2. Seeding can be accomplished with a broadcast spreader or drill seeder, harrow or harrow chain dragged behind mechanized equipment, roller chopper, tractor/dozer, or through aerial application. Seeded portions of treated areas will be rested from grazing for a minimum of two growing seasons following seeding.

#### Monitoring

1. Transects to document fuel bed characteristics and vegetation composition are established prior to implementation within selected proposed treatment areas. When feasible, transect readings and/or photo plots are documented pre-treatment and at one, three and seven year intervals following treatment completion. Monitoring results are incorporated into management decisions regarding future resource actions that may involve maintenance burning, additional seeding, reintroduction and/or adjustment of grazing seasons or numbers, additional mechanical or herbicide treatment and other actions.

2. Management decisions requiring treatments not previously analyzed would initiate further environmental assessment.

#### Miscellaneous

1. In select areas, slash and debris from fuel management activities along designated roads or other accessible areas may be made available to the public for wood harvest.

2. All-terrain vehicles (ATVs) may be utilized at various times by BLM and/or contract crews throughout the project area to transport fuel, supplies and equipment. ATV's will avoid disturbance to any identified archaeological sites and/or other buffered areas.

3. BLM personnel will periodically observe ongoing treatments to ensure no adverse effect to nesting raptors or other bird species or to cultural and/or historic remains.

#### **Fireline Rehabilitation Guidelines**

The following guidelines can be used in whole or in part depending on ecological site needs, severity of disturbance and management directive within the Canyon Country Fire Zone fuels program(CYFZ).:

##### **Fireline:**

- 1.) Pull soil, duff, litter and rocks over line
  - Rake the line to scarify the soil surface; pull soil, duff, litter and rocks back into original position and mimic natural grade
  - Rehabbed line should blend with surrounding contours.
- 2.) Scatter Brush over the Line
  - Cover at least 50% of the fire line

- Scattered duff, needle litter, and brush should appear random to eliminate the appearance of a straight line disturbance. In general the amount and type of duff, litter, and brush should match the surrounding area.

3.) Construct water bars or berms to reduce channeling and deflect erosion on slopes

- Temporary berms are preferable to water bars. When constructing water bars utilize local woody material
- Use the following table to create water bars or berms:

Slope %	Spacing (Ft.)
2	250
5	135
10	80
15	60
20	45
25	40
30	35

- Construct at 45 degree angles to the contour

#### **Aesthetic Considerations**

- When replacing larger rocks in the fireline, place the weathered side up
- Obliterate cup trenches and ditches
- Flush cut all stumps
- Remove all flagging, signs, and garbage associated with activity

Walk through adjacent undisturbed areas to take a look at your rehab efforts to determine your success at returning the area to as natural as possible.




















## APPENDIX F: Utah Noxious Weeds List










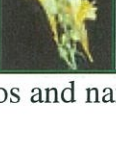
### Utah Noxious Weed List Current as of March 2014

The following weeds are hereby officially designated and published as noxious for the State of Utah, as per the authority vested in the Commissioner of Agriculture and Food under Section 4-17-3, Utah Noxious Weed Act:

There are hereby designated three classes of noxious weeds in the state:

- **"Class A" weeds** have a relatively low population size within the State and are of highest priority being an *Early Detection Rapid Response* (EDRR) weed.
- **"Class B" weeds** have a moderate population throughout the State and generally are thought to be controllable in most areas.
- **"Class C" weeds** are found extensively in the State and are thought to be beyond control. Statewide efforts would generally be towards containment of smaller infestations.

Class A Weeds		Class B Weeds		Class C Weeds	
Black Henbane		<a href="#">Bermudagrass</a>		<a href="#">Canada Thistle</a>	
Diffuse Knapweed		<a href="#">Dalmatian Toadflax</a>		<a href="#">Field Bindweed</a>	
Johnsongrass		<a href="#">Dyer's Woad</a>		<a href="#">Houndstongue</a>	
Leafy Spurge		<a href="#">Hoary Cress</a>		<a href="#">Quackgrass</a>	
Medusahead		<a href="#">Musk Thistle</a>		<a href="#">Saltcedar</a>	
Oxeye Daisy		<a href="#">Perennial Pepperweed</a>			

Purple Loosestrife		Poison Hemlock <a href="#">Poison Hemlock</a>			
St. Johnswort		Russian Knapweed <a href="#">Russian Knapweed</a>			
Spotted Knapweed		Squarrose Knapweed <a href="#">Squarrose Knapweed</a>			
Sulfur Cinquefoil		Scotch Thistle <a href="#">Scotch Thistle</a>			
Yellow Starthistle					
Yellow Toadflax					

(Weeds list, photos and names all taken directly from <http://www.utahweed.org/weeds.htm>)



## APPENDIX G: Seed Mix

Seed: Common Name	Seed: Scientific Name
Scarlet Globemallow	Sphaeralcea coccinea
Idaho Fescue	Festuca idahoensis
Needle and Thread	Stipa comata
Sandberg Bluegrass	Poa secunda
Indian Ricegrass	Oryzopsis hymenoides
Winterfat	Ceratoides lanata
Bitterbrush	Purshia tridentata
Fourwing Saltbush	Atriplex canescens
Western Wheatgrass	Agropyron smithii
Crested Wheatgrass	Agropyron cristatum

## APPENDIX H: Juniper Old Growth Characteristics

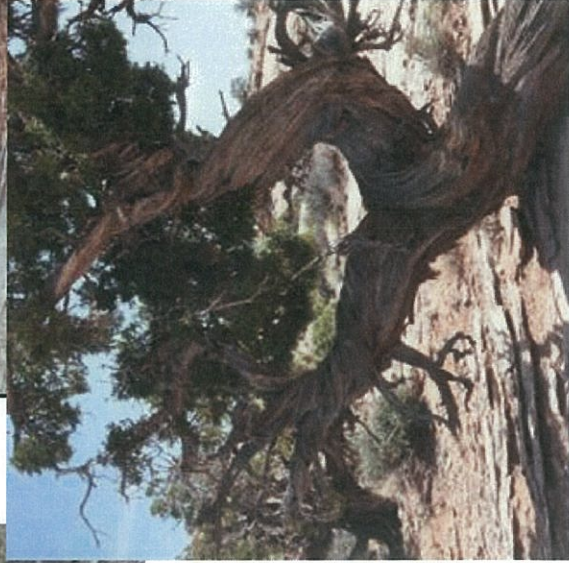
### True Juniper Woodlands and Old Growth Trees

- ❖ Where do they occur?
  - Sites with shallow or gravelly soils that typically do not support an herbaceous understory (e.g. steep slopes, ridgelines, fans with shallow hardpan).
  - Because of the lack of herbaceous understory these areas experience very infrequent fires.
  - 20% of stands in Utah are more than 200 years old
- ❖ Characteristics of old growth trees
  - Rounded canopy rather than pointed
  - Nonsymmetrical tops
  - Deeply furrowed, shaggy bark
  - Twisted trunks or branches
  - Dead branches and spike tops
  - Large lower limbs
  - Hollow trunks
  - Note: Tree size is not a good indicator of old growth, e.g. juniper in unproductive sites can be short in stature and still portray all of the characteristics of old growth. Conversely, juniper on productive sites can be very tall but lack the general old growth characteristics.



Information from: Miller, R., R. Tausch and W. Waichler. 1999. Old-growth juniper and pinyon woodlands. In: Monsen, S. B., Stevens, R., comps. 1999. Proceedings: ecology and management of pinyon juniper communities within the Interior West, 1997 Sept. 15-18; Provo, UT. RIMRS-P-9. USDA Forest Service, Rocky Mountain Research Station.







## APPENDIX I: Fire Regime Condition Class (FRCC)

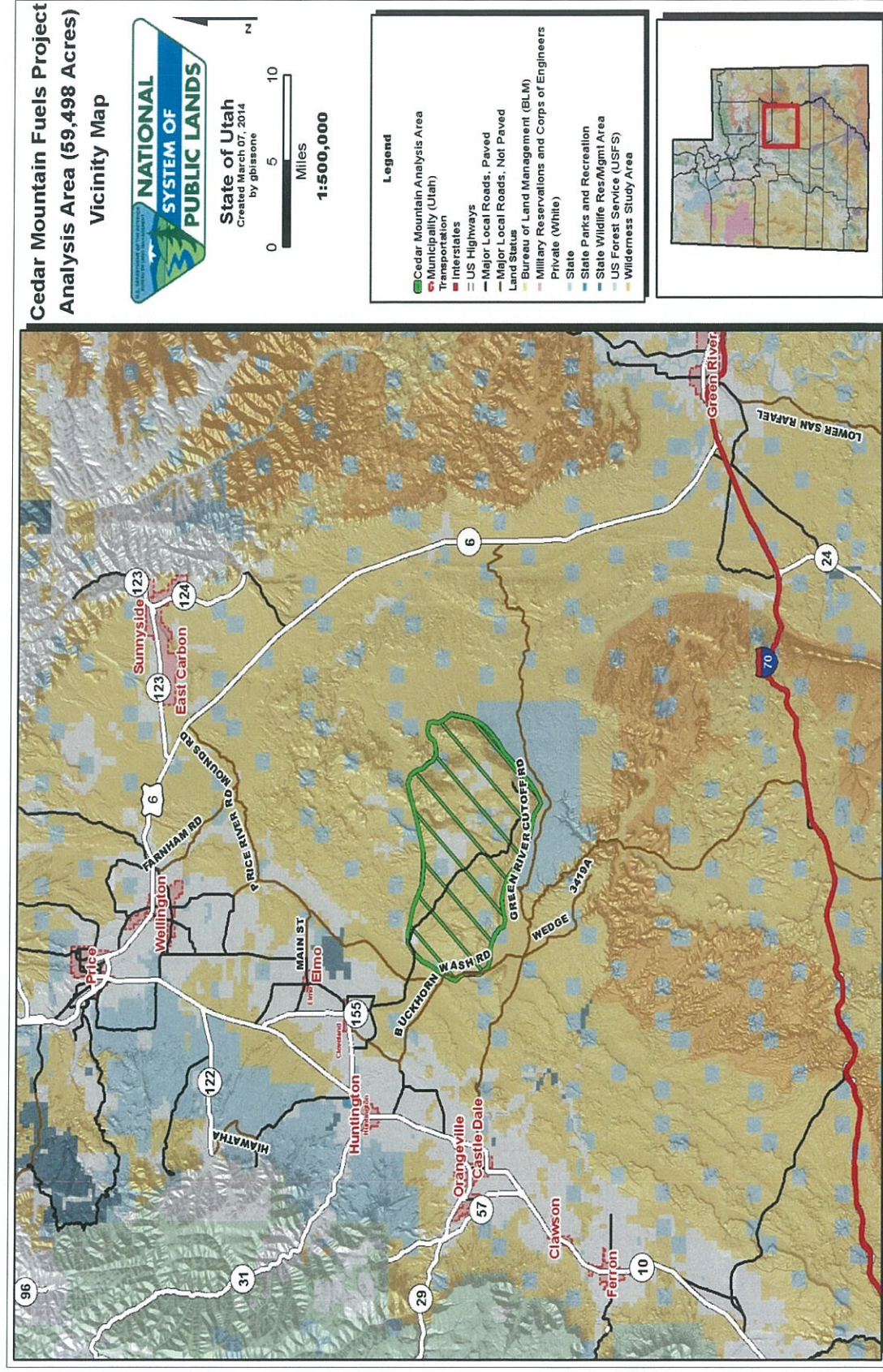
### CONDITION CLASS

**Condition class descriptions:** Condition classes are a function of the degree of departure from historical fire regimes resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, and canopy closure. One or more of the following activities may have caused this departure: fire exclusion, timber harvesting, grazing, introduction and establishment of exotic plant species, insects and disease (introduced or native), or other past management activities.

Condition Class	Attributes	Example Management Options
Condition Class 1	<ul style="list-style-type: none"><li>• Fire regimes are within or near an historical range.</li><li>• The risk of losing key ecosystem components is low.</li><li>• Fire frequencies have departed from historical frequencies by no more than one return interval.</li><li>• Vegetation attributes (species composition and structure) are intact and functioning within an historical range.</li></ul>	Where appropriate, these areas can be maintained within the historical fire regime by treatments such as fire use.
Condition Class 2	<ul style="list-style-type: none"><li>• Fire regimes have been moderately altered from their historical range.</li><li>• The risk of losing key ecosystem components has increased to moderate.</li><li>• Fire frequencies have departed (either increased or decreased) from historical frequencies by more than one return interval. This results in moderate changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns.</li><li>• Vegetation attributes have been moderately altered from their historical range.</li></ul>	Where appropriate, these areas may need moderate levels of restoration treatments, such as fire use and hand or mechanical treatments, to be restored to the historical fire regime
Condition Class 3	<ul style="list-style-type: none"><li>• Fire regimes have been significantly altered from their historical range.</li><li>• The risk of losing key ecosystem components is high.</li><li>• Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns.</li><li>• Vegetation attributes have been significantly altered from their historical range.</li></ul>	Where appropriate, these areas may need high levels of restoration treatments, such as hand or mechanical treatments. These treatments may be necessary before fire is used to restore the historical fire regime.



# APPENDIX J: Project Vicinity





# APPENDIX K: Phase 1 Units Map

